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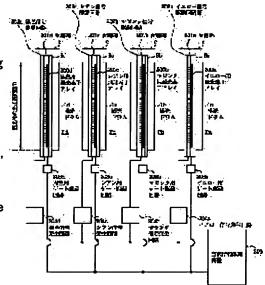
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(54) IMAGE-FORMING APPARATUS AND LIGHT-EMITTING APPARATUS (57)Abstract:

PROBLEM TO BE SOLVED: To reduce costs at a light-emitting element array part in an image- forming apparatus and eliminate characteristic compensation among element arrays by using a one-chip light-emitting element array and constituting four one-chip light-emitting element arrays arranged for each photosensitive body of a single substrate. SOLUTION: Each of a yellow light-emitting element array 200a, a magenta light-emitting element array 200b, a cyan light-emitting element array 200c and a black light-emitting element array 200d uses a one-chip light-emitting element array arranged to cover the whole area of a main scan distance in a main scan direction when each photosensitive drum rotates and moves. Each light-emitting element array is integrated into one chip having a plurality of light-emitting elements arranged with a high resolution not lower than, e.g. 600

dpi to cover the whole area of the main scan distance of



the photosensitive body. Preferably, the one-chip light-emitting element array used for the light- emitting element arrays 200a, 220b, 200c, 200d is formed of a single substrate which is cut and separated to four to obtain the arrays.

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CLAIMS <u>DETAILED DESCRIPTION</u> <u>TECHNICAL FIELD</u> <u>PRIOR ART EFFECT OF THE INVENTION</u> <u>TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS</u>

[Translation done.]

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CLAIMS

[Claim(s)]

[Claim 1] a. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor and b. photo conductor, [two or more] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 2] The aforementioned light emitting device is image formation equipment according to claim 1 which is the element which has an organic light emitting device.

[Claim 3] The aforementioned photo conductor is image formation equipment according to claim 1 which is an electrophotography photo conductor.

[Claim 4] The aforementioned electrophotography photo conductor is image formation equipment according to claim 3 which is an organic electrophotography photo conductor.

[Claim 5] The aforementioned electrophotography photo conductor is image formation equipment according to claim 3 which is an inorganic electrophotography photo conductor.

[Claim 6] The aforementioned inorganic electrophotography photo conductor is image formation equipment according to claim 5 which is an amorphous silicon electrophotography photo conductor.

[Claim 7] It is image formation equipment according to claim 1 whose 2nd terminal of the above the aforementioned SUITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and is a source terminal.

[Claim 8] The aforementioned SUITCHINGU element array is image formation equipment according to claim 1 by which one chip fabrication is carried out.

[Claim 9] The aforementioned simultaneous luminescence circuit is image formation equipment

according to claim 1 which is the circuit which has the sample hold circuit.

[Claim 10] a. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor and b. photo conductor, [two or more] The SUITCHINGU lement array which has two or more SUITCHINGU elements which were made to conn ct for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the exposure means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously, the aforementioned 1st wiring group -- the 2nd scanning signal -impressing -- the 2nd wiring group -- this -- the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 11] The aforementioned simultaneous luminescence circuit is image formation equipment according to claim 10 which is the circuit which has the sample hold circuit.

[Claim 12] a. The light-emitting-device array which has two or more trains and the light emitting device which carried out multi-line arrangement to a photo conductor and b. photo conductor, Have two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. The SUITCHINGU element array which arranged this SUITCHINGU element to the multi-line, Classify the SUITCHINGU element for every line into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -the 2nd wiring group -- this -- the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously [Claim 13] The aforementioned simultaneous luminescence circuit is image formation equipment according to claim 12 which is the circuit which has the sample hold circuit. [Claim 14] a. The light-emitting-device array which has two or more trains and the light emitting

device which carried out multi-line arrangement to a photo conductor and b. photo conductor, Have two or more SUITCHINGU elements with which it was made to connect for every light

emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. The SUITCHINGU element array which arranged this SUITCHINGU element to the multi-line, Classify the SUITCHINGU element for every line into two or more groups, and for every group of two or more this classified SUITCHINGU elements The 1st wiring group in every [to which the 1st terminal of a SUITCHINGU element is connected in common] line. Two or more 2nd wiring groups which wired independently for every SUITCHINGU element for every line of this the line whole [to which the 2nd terminal of a SUITCHINGU element is connected]. It has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. and by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of the exposure means and c. multi-line which perform exposure to the aforementioned photo conductor. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed, the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- Image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously.

[Claim 15] The aforementioned simultaneous luminescence circuit is image formation equipment according to claim 14 which is the circuit which has the sample hold circuit.

[Claim 16] The light-emitting-device array which has the light emitting device arranged to ** on the other hand, the SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, [two or more] Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to a luminescence means to perform simultaneous luminescence from this light-emitting-device array, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 17] The aforementioned light emitting device is luminescence equipment according to claim 16 which is the element which has an organic light emitting device.

[Claim 18] It is luminescence equipment according to claim 16 whose 2nd terminal of the above the aforementioned SUITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and is a source terminal.

[Claim 19] The aforementioned SUITCHINGU element array is luminescence equipment according to claim 16 by which one chip fabrication is carried out.

[Claim 20] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 16 which is the circuit which has the sample hold circuit.

[Claim 21] The light-emitting-device array which has the light emitting device arranged to ** on the other hand, the SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, [two or more] Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the luminescence means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out, two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 22] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 21 which is the circuit which has the sample hold circuit.

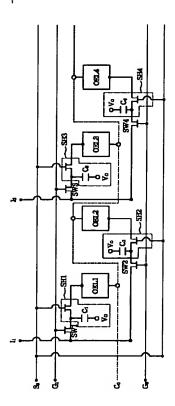
[Claim 23] It has the light-emitting-device array which has two or more trains and light emitting devices which carried out multi-line arrangement, and two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line. The SUITCHINGU element array which the SUITCHINGU element of one line was made to correspond for every line, and was arranged to the multi-line by this, Classify the SUITCHINGU element for every line into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to the luminescence means of this light-emitting-device array which carries out simultaneous luminescence, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the

- capacitor based on this voltage signal may discharge simultaneously
- [Claim 24] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 23 which is the circuit which has the sample hold circuit.
 - [Claim 25] Have the light-emitting-device array which has two or more trains and light emitting devices which carried out multi-line arrangement, and two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line, by this The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line are classified into two or more groups. The 1st wiring group for every [to which the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements] line, Two or more 2nd wiring groups to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element for every line of this and which wired independently for every line, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, c. The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of a multi-line. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, a polar voltage signal may be impressed on the other hand and the capacitor based on this voltage signal may discharge simultaneously

[Claim 26] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 25 which is the circuit which has the sample hold circuit.

[Translation done.]

Drawing selection [R pr sentative drawing]



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JAPANESE [JP,11-198433,A]

<u>CLAIMS</u> DETAILED DESCRIPTION <u>TECHNICAL FIELD</u> <u>PRIOR ART</u> <u>EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS</u>

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DETAILED DESCRIPTION

[Detailed Description of the Invention] [0001]

[The technical field to which invention belongs] this invention relates to the image formation equipment which is made to correspond for every photo conductor, forms cyanogen, a Magenta, y llow, and a black picture, and forms a color picture by compounding these pictures by arranging two or more photo conductors to a single tier, and using each photo conductor independently especially, about the luminescence equipment used for the image formation equipment and this like an electrophotography copying machine.

[0002]

[Description of the Prior Art] The laser beam light source is prepared as an image exposure means for every four electrophotography photo conductors made the single tier arrange, respectively. The oscillation of the four laser beam light sources each is made to control based on cyanogen, a Magenta, yellow, and each black image information. by this The laser beam light source image formation equipment which forms a color picture is known by making cyanogen, a Magenta, yellow, and an electrostatic black latent image form for every four electrophotography photo conductors, and making these electrostatic latent images develop, and making the development picture of these plurality compound.

[0003] Moreover, it changes into the laser beam light source used with the aforementioned image formation equipment, and the Light Emitting Diode light source image formation equipment which has arranged the four Light Emitting Diode light sources for every photo conductor as the light source in which cyanogen, a Magenta, yellow, and an electrostatic black latent image are made to form is also known.

[0004] It is difficult for the present condition it to make in agreement correctly both the main scanning direction of each laser beam and the direction of vertical scanning every four laser beam light sources arranged for every four photo conductors, since the aforementioned laser beam light source image formation equipment makes in agreement cyanogen, a Magenta, yellow, and each black picture and makes them compound.

[0005] On the other hand, with the aforementioned Light Emitting Diode light source image formation equipment, although it could be made to realize comparatively simply, since the demand which makes in agreement both above—mentioned main scanning direction and directions of vertical scanning needed to use two or more Light Emitting Diode chips as the connector type Light Emitting Diode element which it comes to tie to a single tier in addition to Light Emitting Diode being expensive, it became still more expensive. Furthermore, since, as for a Light Emitting Diode chip, the luminescence property was different for every chip, it was made to expose by the same connector type Light Emitting Diode element as the above, and the exposure condition was different for every luminescence property of a chip in main scanning direction, consequently the horizontal–scanning exposure whole region to movement of a photo conductor worsened picture repeatability of main scanning direction.

[0006] Moreover, in the electrophotography copying machine which can form a color picture, th luminescence property between two or more of said connector type Light Emitting Diode elements arranged for two or more photo conductors of every even in this case although it needed to tiliand the mold Light Emitting Diode element needs to be arranged for two or more photo conductors of every was different, and the difficult demand which has been arranged for every photo conductor and which ties and adjusts the luminescence property between mold Light Emitting Diode elements had newly occurred.

[0007]

[Problem(s) to be Solved by the Invention] The image formation equipment with which Object of the Invention used the connector type Light Emitting Diode element for the aligner. The variation of the luminescence property in main scanning direction which had become a problem especially in the electrophotography copying machine is canceled. The number of drive wiring and the number of drive circuit chips of a printer head are reduced sharply, luminescence brightness is raised to sufficient size with this, and it is in the point which brings forward the process speed of an electrophotography copying machine sharply by this.

[0008] Furthermore, Object of the Invention increases the luminescence time of a light emitting device sharply, and is in longer **** sharply about the life of a printer head.

[Means for Solving the Problem] The light-emitting-device array which has the light emitting device which has arranged two or more this inventions the 1st to the main scanning direction to the move direction of a. photo conductor and b. photo conductor, The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- The driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously, To the image formation equipment which ****, it has the 1st feature, to the 2nd a photo conductor, b. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor, [two or more] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the exposure means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate

sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 2nd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 3rd, The SUITCHINGU element array which has two or more SUITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SUITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 3rd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 4th, The SUITCHINGU element array which has two or more SUITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SUITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SUITCHINGU elements The 1st wiring group in every [to which the 1st terminal of a SUITCHINGU element is connected in common] line, Two or more 2nd wiring groups which wired independently for every SUITCHINGU element for every line of this the line whole [to which the 2nd terminal of a SUITCHINGU element is connected], It has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of the exposure means and c. multi-line which perform exposure to the aforementioned photo conductor. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing the above -- even if few -- the one 2nd wiring group -- this -- The 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of the 1st driving

means which operate the aforementioned simultaneous luminescence circuit, and d. multi-line so that the capacitor based on this information signal may discharge simultaneously, and they are other 2nd wiring groups of two or more 2nd wiring groups. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. alike -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed. the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 4th feature and has the light emitting device arranged on the other hand to the 5th at **, [two or more] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to a luminescence means to perform simultaneous luminescence from this light-emitting-device array, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 5th feature and has the light emitting device arranged on the other hand to the 6th at **, [two or more] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the luminescence means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 6th feature and has two or more trains and the light

emitting device which carried out multi-line arrangement in the 7th, Have two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line by this are classified into two or more groups. The 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements, The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element of this, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. and the 1st wiring group of c. above -- the 1st scanning signal -- impressing -- the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously Have the light-emitting-device array which has the 7th feature and has in the octavus two or more trains and the light emitting device which carried out multi-line arrangement, and two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. by this The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line are classified into two or more groups. The 1st wiring group for every [to which the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements] line, Two or more 2nd wiring groups to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element for every line of this and which wired independently for every line, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, c. The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of a multi-line. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed. the above -- the 1st wiring group of an other bank -the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage

- signal may discharge simultaneously, it has the feature of the octavus.
- [0010] In the 1st example of a mode with a desirable this invention, the aforementioned light emitting device is an element which has an organic light emitting device.
- [0011] In the 2nd example of a mode with a desirable this invention, the aforementioned photo conductor is organic or an inorganic electrophotography photo conductor.
 - [0012] In the 4th example of a mode with a desirable this invention, the aforementioned SUITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and the 2nd terminal of the above is a source terminal.
 - [0013] In the 5th example of a mode with a desirable this invention, one chip fabrication of the aforementioned SUITCHINGU element array is carried out.
 [0014]

[Embodiments of the Invention] The example of this invention is explained according to a drawing. <u>Drawing 1</u> is the cross section of the image formation equipment which used the luminescence equipment of this invention as an aligner, especially a color electrophotography copying machine.

[0015] Printed material, such as a form, is contained by the cassette 6 and makes printed material feed to a mechanical component towards the conveyance section in the color copying machine shown in this drawing with operation of image formation (henceforth a print) from a cassette 6. The conveyance belt 31 can carry out the both-way run of between a roller 35 and rollers 36 and 37 by carrying out the suspension of the conveyance belt 31 between the drive roller 35 and two follower rollers 36 and 37, forming the conveyance section in it, and carrying out the rotation drive of the drive roller 35 by the motor 38 here. In addition, the direction which runs is a direction shown in the arrow A in drawing in the belt 31 bottom.

[0016] The image formation units Pa, Pb, Pc, and Pd of four units are formed along the direction where the conveyance belt 31 extends. These image formation units Pa, Pb, Pc, and Pd have the respectively same composition, and explain the composition roughly hereafter taking the case of the image formation unit Pa of the 1st amorous glance.

[0017] In the image formation unit Pa, the cylinder-like photo conductor which approaches the conveyance belt 31 and rotates in the direction of arrow B, i.e., photoconductor drum 1a, is arranged. The photosensitive layer of the front face is uniformly charged with rotation of photoconductor drum 1a by primary electrification machine 4a constituted from zone-of-contact electrical machinery. Then, the light figure of the yellow component of a manuscript picture is exposed by luminescence from exposure means 8a using the aforementioned one chip light-emitting-device array which exposes the horizontal-scanning whole region of a photoconductor drum, and a yellow component static latent image is formed in this electrification photosensitive layer of it. The portion in which this latent image was formed moves by the rotation one by one, reaches the position of yellow development counter 2a, is developed by the yellow toner supplied from yellow development counter 2a in the position, and is visualized.

[0018] A yellow toner image results in an imprint part with corona-electrical-charging machine 3a prepared through the conveyance belt 31 with this drum 1a by rotation of photoconductor drum 1a. Timing is doubled with this and printed material is conveyed by the imprint part with the conveyance belt 31. Next, by impressing imprint bias to corona-electrical-charging machine 3a, the yellow toner image on photoconductor drum 1a is imprinted on printed material with rotation of photoconductor drum 1a, and goes.

[0019] Then, with rotation of photoconductor drum 1a, the toner which remains on it is removed by cleaning equipment (not shown), and will be in the state where it can go into the following image formation process. On the other hand, the printed material by which the yellow toner image was imprinted is conveyed with the conveyance belt 31 by the print section by the image formation unit Pb of the 2nd amorous glance.

[0020] The image formation unit Pb of the 2nd amorous glance is the same composition as the

image formation unit Pa of the 1st amorous glance mentioned above, and like the above by luminescence from exposure means 8b using the one chip light-emitting-device array The light figure of the Magenta component of a manuscript picture is exposed, a Magenta component static latent image is formed, development by the Magenta toner is performed, and in the imprint section, on printed material, the obtained Magenta toner image lays on top of the yellow toner image of the 1st amorous glance, and is imprinted. Similarly, with conveyance of printed material, you form a cyanogen component static latent image and a black component static latent image, respectively, a cyano toner image and a black toner image make it imprint in piles in each process by luminescence by the exposure meanses 8c and 8d using each one chip light-emitting-device array in the image formation units Pc and Pd, and the color picture which piled up the toner image of four colors on printed material is formed.

[0021] In the image formation units Pb, Pc, and Pd of the 2nd amorous glance of the above, the 3rd amorous glance, and the 4th amorous glance Photoconductor drums 1b, 1c, and 1d, Magenta development counter 2b, cyano development counter 2c and 2d of black development counters, the corona-electrical-charging machines 3b, 3c, and 3d, and the primary electrification machines 4b, 4c, and 4d constituted from zone-of-contact electrical machinery are used like the image formation unit Pa of the 1st amorous glance, respectively.

[0022] After ending the stroke of the image formation units Pa, Pb, Pc, and Pd, after the printed material by which the toner image of four colors was imprinted is conveyed further and discharged with the separation electric discharge vessel 7, it dissociates from the conveyance belt 31 and it is sent to fixing equipment 5 equipped with the fixing roller 51 and the pressurization roller 52 of a couple. Here, usually, pressurization and heating are performed by the nip section of the rollers 51 and 52 currently heated by predetermined temperature, and fixing of an imprint toner image is performed. Then, printed material is discharged by outside the plane [of a copying machine].

[0023] <u>Drawing 2</u> is a block diagram illustrating the detail of the image formation units Pa, Pb, Pc, and Pd illustrated to <u>drawing 1</u>.

[0024] The exposure meanses 8a, 8b, 8c, and 8d which the image formation units Pa, Pb, Pc, and Pd were made to correspond to photoconductor drums 1a, 1b, 1c, and 1d, respectively, and have been arranged are loaded with light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. Such light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black It lets the wiring sections 201a, 201b, 201c, and 201d which consist of a high-density outgoing line, respectively pass. Yellow signal drive circuit (IC) connect with 202a, Magenta signal drive (circuit IC) 202b, cyano signal drive (circuit IC) 202c, and black signal drive (circuit IC) 202d, and by operation by these drive circuits Each light emitting device is controlled by either luminescence or un-emitting light. According to the picture signal from yellow signal generating circuit 204a, Magenta signal generating circuit 204b, cyano signal generating circuit 204c, and 204d of black signal generating circuits, it is set up so that luminescence operation of a light-emitting-device array can be controlled. The light emitting device used by above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black forms the array (array object) which the single tier was made to arrange by the high resolution of for example, 1200dpi.

[0025] Moreover, in light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black, the following switching element circuit and the sample hold circuit are formed, and the timing of each drive operation of the gate line in these circuits is controlled by gate drive circuit 203for yellow a, gate drive circuit 203for Magentas b, gate drive circuit 203for cyanogen c, and 203d of gate drive circuits for black. And control of the picture signal of control

of this gate drive operation and yellow, a Magenta, cyanogen, and a black signal is performed by the image-information-processing equipment 205 in CPU (not shown).

[0026] The one chip light-emitting-device array which has cover d and arranged the whole r gion of the horizontal-scanning distance D in the main scanning direction to the rotation of photoconductor drums 1a, 1b, 1c, and 1d is used light-emitting-device array 200for yellow a used by this invention, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. These light-emitting-device arrays 200a, 200b, 200c, and 200d are accumulated on the one chip in which two or more light emitting devices arranged 600 dpi by the above 1200dpi resolution which is high resolution, or the high resolution beyond it cover the whole region of the horizontal-scanning distance D of a photo conductor.

[0027] By the desirable example of this invention, the above-mentioned one chip light-emitting-device array used by above-mentioned light-emitting-device array 200 for yellow a, light-emitting-device array 200 for Magentas b, light-emitting-device array 200 for cyanogen c, and light-emitting-device array 200 for black is created from the single substrate which lower-**, and uses for four what carried out cutting separation and was obtained, respectively. [0028] The arrow C in drawing shows the direction of vertical scanning of the photo conductor which rotates. moreover, photoconductor drums 1a, 1b, 1c, and 1d The aluminium pipe of the same diameter (for example, the diameter of 60cm, 30cm, 20cm) was used, the photosensitive layer (for example, an organic photoelectrical body whorl with four [same] or the same a-Si photosensitive layer) of the same kind was used, therefore the traverse speed of the direction C of vertical scanning was set up identically respectively.

[0029] <u>Drawing 3</u> is the perspective diagram of the one chip light-emitting-device array substrate 300 in the process before carrying out cutting separation along with the cutting part lose contact 302 four, respectively from the glass substrate 303 used as the single substrate which formed the one chip light-emitting-device array 301 used by the above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black prepared on the glass substrate 303.

[0030] If it is the size which can form a light-emitting-device array by the one chip, there will be especially no limit in the size of the glass substrate 303 used by this invention.

[0031] Drawing 4 illustrates the equal circuit for every one chip light-emitting-device array 301 illustrated to <u>drawing 3</u> . light emitting devices OEL1, OEL2, OEL3, and OEL4 -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged and it connects with a single tier in an active-matrix circuit this active-matrix circuit -- switching elements SW1, SW2, SW3, and SW4 -- as ... using TFT -- suitable -- **** -- the odd-numbered light emitting devices OEL1 and OEL3 and ... the light-emitting-device group (the 1st group) classified as OEL (2N-1) It connects with each gate terminal of SW (2N-1) in common through the gate line G1. the odd-numbered switching elements SW1 and SW3 and ... the even-numbered light emitting devices OEL2 and OEL4 and ... the light-emitting-device group (the 2nd group) classified as LEL (2Ns) -- the even-numbered switching elements SW2 and SW4 and ... it connects with each gate terminal of SW (2Ns) in common through the gate line G2 the above "N" -- 1, 2, 3, 4, and 5 -- it is the integer of ... and light-emitting-device OEL1-OEL2 which adjoins each other in this active-matrix circuit, OEL3-OEL4, and ... switching element SW1-SW2 which adjoins each other in every OEL(2N-1)-OEL (2Ns), SW3-SW4, and ... the source terminal of every SW(2N-1)-SW (2Ns) -- each source lines I1 and I2 -- it connects in common through ... Moreover, light emitting devices OEL1, OEL2, OEL3, and OEL4 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL1, OEL2, OEL3, and OEL4... It can consider as an anode or a cathode.

[0032] the desirable example of this invention -- switching elements SW1, SW2, SW3, and SW4

... and light emitting devices OEL1, OEL2, OEL3, and OEL4 — sample hold circuits SH1, SH2, SH3, and SH4 and ... are connected between ... These sample hold circuits SH1, SH2, SH3, and SH4 and ... respectively — the capacitors C1, C2, C3, and C4 for charge storages ... having — **** — the capacitors C1, C2, C3, and C4 for these charge storages ... Connect with the switching element for sample hold which connected the gate to the common path cord S0, respectively, and it is made to synchronize with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. Under the present circumstances, capacitors C1, C2, C3, and C4 for charge storages ... A counter electrode is set as a ground or predetermined DC bias VG. Moreover, according to an outside temperature, a time (lifetime), etc., it can carry out adjustable [of the amount of bias of this predetermined DC bias VG].

[0033] <u>Drawing 5</u> is illustrating the drive of the active-matrix circuit illustrated to <u>drawing 4</u> . In the first half of 1 horizontal-scanning period corresponding to one scanning interval by the laser to a photoconductor drum, it is made to synchronize with the gate-on pulse to the gate lines G1 and G2, and the pulse of the peak value which answered the picture signal which is a polar voltage signal (polarity is based on the applied voltage to a path cord C0) on the other hand is impressed to the source lines I1 and I2. This one side polarity voltage signal is made to respond to the gradation information on image information, and each peak value is set up. Moreover, in another desirable example, it can be made to be able to respond to the gradation information on image information, and pulse width or a pulse number can be changed. a path cord S0 -- the capacitors C1, C2, C3, and C4 for charge storages -- the charge by which accumulation maintenance was carried out as image information at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 -- in order to carry out order electric discharge to ... and to make light emit, the gate-on pulse for setting the gate of the switching element for sample hold as ON is impressed the impression stage of this gate-on pulse -- the capacitors C1, C2, C3, and C4 for charge storages -- it is set up so that it may be made to operate, after a charge is fully charged by ...

[0034] As for the pulse of a polar voltage signal, on the other hand in the second half of 1 continuing horizontal-scanning period, it is desirable for the voltage signal of reversed polarity to be impressed and to set a voltage average with a voltage signal as zero in the first half a voltage signal and the second half in this case, and to set [which was synchronized with the gate-on pulse to the gate lines G1 and G2, and was used for source line I1I2 in the period of the first half] up so that DC component may be lessened as much as possible, the operation same to a path cord S0 as the time of the first half — the capacitors C1, C2, C3, and C4 for charge storages — the charge by which accumulation maintenance was carried out at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 — it reverse-discharges to ... The state where light is not emitted is formed by this reverse electric discharge.

[0035] <u>Drawing 6</u> illustrates one of the desirable examples of the light-emitting-device array of this invention. this light-emitting-device array — the [the 1st light-emitting-device array block, the 2nd light-emitting-device array block, and] — it is classified into three blocks which consist of 3 light-emitting-device array blocks, and the circuit which illustrates every block to <u>drawing 4</u> is incorporated under the present circumstances, in the example of <u>drawing 6</u>, it is set as the wiring for a time-sharing drive with three time sharing — having — every block — the [the 1st gate line block (G11, G12, G13), the 2nd gate line block (G21, G22, G23), and] — 3 gate line block (G31, G32, G33) is wired The source line corresponding to an information signal line may be wired in common for every light-emitting-device array block, and can decrease the number of wiring by this. Moreover, for every light-emitting-device array block, an information line can also be wired independently and the time of 1 horizontal-scanning period can be sharply shortened by this.

[0036] the [the 1st light-emitting-device array block the 2nd light-emitting-device array block, and] — in the first half, 3 light-emitting-device array block has a scan in the first half a scan

and the second half, respectively, and it produces order electric discharge by scan, and in the second half, it impresses a gate-on pulse to path cords S1, S2, and S3 so that reverse electric discharge may be produced by scan Moreover, in the first half, reverse electric discharge may be produced by scan and order electric discharge may be produced by scan in the second half. [0037] Drawing 7 is illustrating the xample of a drive of the light-emitting-device array of drawing 6. The charge to the capacitor for charge storages is started by the impression start of the gate-on pulse to the 1st gate line block (G11, G12, G13), and the electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate-on pulse to a path cord S1. By this, luminescence from a light emitting device can be operated simultaneously the whole block. Then, the charge to the capacitor for charge storages is started by the impression start of the gate-on pulse to the 1st gate line block (G11, G12, G13), and the reverse electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate-on pulse to path cords S1, S2, and S3.

[0038] Reach the 2nd gate line block (G21, G22, G23), it is made to operate one by one like the above also about the 3rd gate line block (G31, G32, G33), and 1 horizontal scanning is performed.

[0039] Drawing 8 shows the cross section about 1 bit of the element structure used in the circuit illustrated to drawing 4. Among drawing, 801 are a substrate and insulators, such as glass and plastics, are used. On the substrate, the switching element section SW1, the sample hold circuit section SH1, and the light-emitting-device section OEL1 are formed. The switching element section SW1 has the 1st transistor structured division constituted by the gate electrode 802, the gate insulator layer 803, the thin-film-semiconductor layer 804, the source electrode 805, and the drain electrode 806. The sample hold circuit section SH1 has the 2nd transistor structured division constituted by the capacitor section for charge storages constituted by the insulator layer 809 prepared in inter-electrode [of the electrode 807-808 of a couple, and this couple] and the gate electrode 810, the gate insulator layer 811, the thin-film-semiconductor layer 812, the source electrode 813, and the drain electrode 814. The light-emitting-device section OEL1 is the light-emitting-device section constituted by the luminous layer 817 prepared in inter-electrode [of the electrode 815-816 of a couple, and this couple].

[0040] the [the 1st used by this invention, and] — as thin-film-semiconductor layers 804 and 812 of 2 transistor sections, a thin film amorphous silicon, thin film polycrystal silicon, or single-crystal—thin-film silicon can be used, and a thin film silicon nitride and thin film tantalum oxide can be used as gate insulator layers 803 and 811 Moreover, as for the electrode of a couple used in the light-emitting-device section OEL1, it is desirable to use one of these as an anode, to use another side as a cathode, and to use reflection nature metal membranes, such as aluminum, silver, zinc, gold, and chromium, as an electrode of another side, using transparent electric conduction films, such as ITO (an indium and stannic-acid ghost) and a tin oxide, as an electrode corresponding to the luminescence direction of radiation.

[0041] Moreover, in order to prevent degradation of a luminous layer in this invention, a wrap's is desirable by the sealing agent in this luminous layer. As this sealing agent, organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0042] Next, although the luminous layer 817 suitably used by this invention is organic electroluminescence (OEL), inorganic [EL] can also be used for it by this invention. [0043] The example of OEL which can be used by this invention is indicated below. [0044] As a material in OEL used by this invention EPA349,265 of Scozzafava; (1990) U.S. patent No. 4,356,429; [of Tang] U.S. patent No. 4,539,507; [, such as VanSlyke,] U.S. patent the 4,720,432;, such as VanSlyke U.S. patent No. 4,769,292; [, such as Tang,] U.S. patent No. 4,885,211; [, such as Tang,] U.S. patent the 4,950,950;, such as Perry U.S. patent No. 5,059,861;

[, such as Littman,] U.S. patent No. 5,047,687; [of VanSlyke] U.S. patent No. 5,073,446; [, such as Scozzafava,] U.S. patent No. 5,059,862; [, such as VanSlyke,] The thing of an indication can be used [U.S. patent / of VanSlyke etc. / No. 5,061,617 /; U.S. patent / of VanSlyke / No. 5,151,629 /; U.S. patent / of Tang etc. / No. 5,294,869 /; U.S. patent / of Tang etc. / No. 5,294,870]. EL layer consists of organic hole pouring in contact with an anode plate and a move band, and the electron injection and move band that form organic hole pouring, and a move band and junction. Hole pouring and a move band may be formed from a single material or two or more single material, and consist of a hole pouring layer in contact with the continuous hole moving bed infixed between an anode plate and a hole pouring layer, an electron injection, and a move band. Similarly, an electron injection and a move band may be formed from single material or two or more material, and consist of an electron-injection layer in contact with the continuous electronic-transition layer infixed between an anode plate and an electron-injection layer, hole pouring, and a move band. A hole, electronic reunion, and luminescence are generated within the electron injection which adjoins junction of an electron injection, a move band and hole pouring, and a move band, and a move band. Although it deposits by vacuum evaporationo typically, it deposits with other conventional technology again, and deals in the compound which forms an OEL layer.

[0045] The organic material which consists of a hole pouring layer in the desirable example is: [0046] which has the following general formulas.

[External Character 1]

$$T_1$$
 T_1
 T_2
 T_2
 T_2
 T_1
 T_2
 T_1
 T_2
 T_1

A metal, a metallic oxide, or the metal halogenides T1 and T2 fill both the unsaturation six membered rings in which N or C-RM expresses hydrogen, or :Q contains a displacer like an alkyl or a halogen here. While a desirable alkyl portion contains the carbon atom of about 1 to 6, it constitutes an allyl-compound portion with a desirable phenyl.

[0047] In the desirable example, the hole moving bed is an aromatic tertiary amine. The desirable subclass of an aromatic tertiary amine is: [0048] containing the tetrapod allyl-compound diamine which has the following formulas.

$$R_7$$
 N — Are_n — N
 R_6
 R_6

Are is a propine group here, n is the integer of 1 to 4, and it is Ar, R7, R8, and R9. It is the allyl-compound group chosen, respectively. In the desirable example, luminescence, an electron injection, and a move band contain a metal oxy-NOIDO (oxinoid) compound. The desirable example of a metal oxy-NOIDO compound is : [0049] which has the following general formulas. [External Character 3]

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$$\begin{bmatrix} R_6 & R_7 \\ R_6 & Q \\ R_4 & Q \\ R_8 & R_2 \end{bmatrix}$$

$$\begin{bmatrix} R_7 & R_6 \\ Q & Q \\ Q & Q \\ R_4 & Q \\ R_2 & R_3 \end{bmatrix}$$

$$\begin{bmatrix} R_7 & R_6 \\ Q & Q \\ Q & Q \\ R_4 & Q \\ Q & Q$$

It is R2-R7 here. Replacement possibility is expressed. At other desirable examples, a metal oxy-NOIDO compound is : [0050] which has the following formulas.

here — R2-R7 a definition is given above — having — L1-L5 — intensive — 12 or a fewer carbon atom — containing — respectively — separate — the hydrogen or the carbohydrate group of a carbon atom of 1 to 12 — expressing — L1 and L2 — both — or both L2 and L3 can form the united benzo ring In other desirable examples, metal oxy-NOIDO compounds are the following formulas.

[0051]

[External Character 5]

It is R2-R6 here. Hydrogen or other replacement possibility are expressed. It is only that the above-mentioned example expresses the existing desirable organic material which is only used within an electroluminescence layer. It does not mean that they restrict the visual field of this invention, and, generally this directs an organic electroluminescence layer. Organic EL material contains the coordination compound which has an organic ligand so that the above-mentioned example may show.

[0052] As a segment electrode 403 used by the light emitting device of this invention, reflection nature metals, such as aluminum, silver, zinc, gold, and chromium, can be used, and transparent electric conduction films, such as indium teens OKISAIZU and a tin oxide, can be used as a counterelectrode 402.

[0053] As a sealing agent 405 used by this invention, it is closed with organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy. Moreover, as a protective layer 404 used by this invention, the coat material by organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0054] With the image formation equipment of this invention, inorganic photo conductive materials, such as organic photo conductive materials, such as BENZO oxazole system photo

conductor matter, BENZO thiazole system photo conductor matter, and triphenylamine system photo conductor matter, or amorphous silicon (a-Si) photo conductor matter, amorphous silicon germanium alloy (a-SiGe) photo conductor matter, and amorphous silicon carbon alloy (a-SiC) photo conductor matter, can be used as a photo conductors [1a, 1b, 1c and 1d] photosensitive lay r.

[0055] Thus, on the created element, 150nm of silicon nitrides was formed in the spatter, and the protective layer was formed for closure. In addition, protective-layer formation performed membrane formation within the same vacuum system from organic layer membrane formation. [0056] What has a big work function as an anode material organic [Light Emitting Diode] is desirable, and can use a tin oxide, gold, platinum, palladium, a selenium, iridium, copper iodide, etc. other than ITO used by this example.

[0057] On the other hand, what has a work function small as a cathode material is desirable, and can use Mg, aluminum, Li, In(s), or these alloys other than Mg/Ag used by this example.

[0058] About an electron hole transporting bed, the hole transportability compound expressed to the following table other than TPD can be used.

[0059] Moreover, you may use not only an organic material but inorganic material. a-Si, a-SiC, etc. are raised as inorganic material used.

[0060] As an electronic transporting bed, it is Alq3. The electronic transportability compound otherwise expressed to the following table can be used.

[0061] Moreover, dopant coloring matter as shown in the following table 10 can also be doped to an electronic transporting bed or an electron hole transporting bed.

[0062] As for a material organic [Light Emitting Diode], it is desirable to choose what considers spectrum luminescence with sensitivity as the photoconductor drum to be used. [0063]

[External Character 6]

ホール輸送体

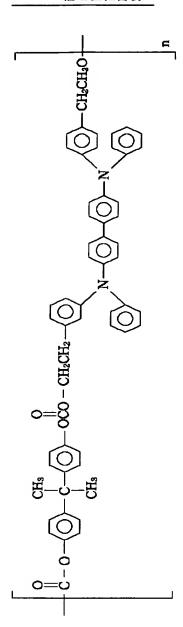
$$CH_3$$
 N
 CH_3
 CH_3
 CH_3

[0064] [External Character 7]

$$CH_3$$
 CH_3 $CH = CH$ CH

[0065]

[External Character 8]



[0066] [External Character 9]

$$C_2H_5 \longrightarrow CH = N - N$$

$$CH = N - N$$

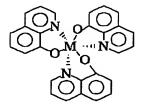
$$C_{2}H_{5}$$

$$\bigcirc\bigcirc\bigcirc\bigcirc$$
 $CH = N - N$

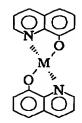
[0067] [External Character 10]

[0068] [External Character 11]

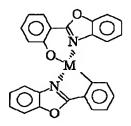
電子輸送性化合物



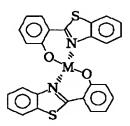
M: Al, Ga



M: Zn, Mg, Be



M: Zn, Mg, Be



M: Zn, Mg, Be

[0069]

[External Character 12]

電子輸送性化合物

$$CH_3 - CH_3 \longrightarrow N \longrightarrow N \longrightarrow N$$

$$CH_{3} - CH_{3} \longrightarrow N \longrightarrow N \longrightarrow N \longrightarrow N \longrightarrow CH_{3}$$

$$CH_{3} \longrightarrow CH_{3} \longrightarrow CH_{3}$$

$$CH_{3} \longrightarrow CH_{3}$$

[0070]

[External Character 13]

$$\left(\begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \end{array} \right)_{2}$$

[0071]

[External Character 14]

電子輸送性化合物

$$\bigcirc C = CH - CH = C$$

$$\bigcirc \bigcirc - \bigcirc - \bigcirc + \bigcirc - \bigcirc + \bigcirc - \bigcirc \bigcirc$$

[0072]

[External Character 15]

[0073] <u>Drawing 9</u> is the light emitting device of another desirable mode of this invention. The luminous layer 817 which the same thing as the switching element section SW1 and the sample hold circuit section SH1 which were used by <u>drawing 8</u> was prepared on the downward substrate 801, and was prepared in inter-electrode [of the electrodes 816 and 815b of the couple for forming a 1-bit light-emitting part on the upper substrate 901 (insulating substrates, such as glass) and this couple] is arranged. The substrates 801 and 901 of these couples carry out opposite arrangement towards the inside, and electrode 815a on a substrate 801 and electrode 815b on a substrate 901 are electrically connected by the electroconductive glue (adhesive electrical connection object) 902.

[0074] The adhesive electrical connection object 902 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry this by adoption of screen printing, offset printing, or the dispenser applying method using the electroconductive glue by which distributed content of a conductive particle like a carbon particle, and a silver-granule child and a copper particle was carried out into an epoxy system or phenol system heat-curing adhesives.

[0075] In order to reinforce interface adhesive strength, silane coupling agents, such as N-(2-aminoethyl)-3-aminopropyl m thyl dimethoxysilane, N-(2-aminoethyl)-3-aminopropyl trimethoxysilane, 3-aminopropyl methyldiethoxysilane, and 3-glycidoxypropyltrimetoxysilane, can be made to contain in an above-mentioned electroconductive glue.

[0076] A pewter etc. is mentioned as other examples of the adhesive electrical connection object 902.

[0077] The adhesive electric insulation object 903 is formed in the periphery section of the above-mentioned adhesive electrical connection object 902. The adhesive electric insulation object 903 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry an epoxy system or phenol system insulation adhesives by methods, such as offset printing, screen printing, or the dispenser applying method. Under the present circumstances, it is suitable to use the manufacture method of preparing an electroconductive glue to the substrate of the direction in which insulating adhesives are formed to one substrate of the upper substrate 901 or a substrate 801, and these insulating adhesives are not formed, in the application of insulating adhesives and an electroconductive glue.

[0078] Moreover, in this invention, it can replace with the above-mentioned adhesive electric

insulation object 903, and liquid insulators, such as liquid crystal like an insulator without adhesive strength, for example, an organic solvent, a high-boiling point organic solvent, a nematic liquid crystal, cholesteric liquid crystal, and a smectic liquid crystal, can also be used. [0079] Moreover, the above-mentioned adhesive electric insulation object 903 or a non-adhesive property electric insulation object can also be made to contain coloring objects, such as a color pigment and a paint, so that it may have shading hardening. [0080] Drawing 10 is another desirable example of this invention. The luminescence equipment illustrated to drawing 10 is equipped with the parallel one chip light-emitting-device array 100 of two lines which prepared the parallel one chip light-emitting-device array located in head line 100A and consecutiveness line 100B to the move direction of photo conductors, such as a photoconductor drum. It is good that it is made to perform the writing of one line by operation of this parallel one chip light-emitting-device array 100 of two lines. [0081] Drawing 11 is the equal circuit of the parallel one chip light-emitting-device array 100 of two lines illustrated to drawing 10. The thing of the same equal circuit as the element illustrated to above-mentioned drawing 3, respectively can be used for the one chip light-emitting-device array of head line 100A and consecutiveness line 100B. [0082] the light emitting devices OEL11, OEL12, OEL13, and OEL14 of head line 100A and head line 100A with which the one chip light-emitting-device array of consecutiveness line 100B is equipped -- the light emitting devices OEL21, OEL22, OEL23, and OEL24 of ... and consecutiveness line 100B -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged, respectively and it connects with 2 parallel in an active-matrix circuit this active-matrix circuit -- switching elements SW11, SW12, SW13, and SW14 -- as ... using TFT -- suitable -- **** -- the odd-numbered light emitting devices OEL11 and OEL13 and ... the light-emitting-device group (the 1st group) classified as OEL1 (2N-1) It connects with each gate terminal of SW1 (2N-1) in common through the gate line G(100A) 1. the odd-numbered switching elements SW11 and SW13 and ... the even-numbered light emitting devices OEL12 and OEL14 and ... the light-emitting-device group (the 2nd group) classified as OEL1 (2Ns) -- the even-numbered switching elements SW12 and SW14 and ... it connects with each gate terminal of SW1 (2Ns) in common through the gate line G(100A) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL11-OEL12, OEL13-OEL14, and ... switching element SW11-SW12 which adjoins each other in every OEL1(2N-1)-OEL1 (2Ns), SW13-SW14, and ... for the source terminal of every SW1(2N-1)-SW1 (2Ns) each source lines I (100A)1 and I (100A)2

-- it connects in common through ... Moreover, light emitting devices OEL11, OEL12, OEL13, and OEL14 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL11, OEL12, OEL13, and OEL14... It can consider as an anode or a cathode. furthermore, the switching elements SW11, SW12, SW13, and SW14 ... light emitting devices OEL11, OEL12, OEL13, and OEL14 -- the same sample hold circuit as the element of drawing 3 is connected between ... This sample hold circuit is equipped with the capacitor for charge storages, respectively, the capacitor for charge storages of an odd number train connects the gate to the common path cord S(100A) 1, and the gate is connected to the common path cord S(100A) 2, and the capacitor for charge storages of an even number train is synchronized with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. [0083] the light emitting devices OEL21, OEL22, OEL23, and OEL24 of head line 100A and consecutiveness line 100B of parallel arrangement -- similarly in the active-matrix circuit linked to ... the odd-numbered light emitting devices OEL21 and OEL23 and ... the light-emitting-device group (the 1st group) classified as OEL2 (2N-1) It connects with each gate terminal of SW2 (2N-1) in common through the gate line G(100B) 1. the odd-numbered switching elements SW21 and SW23 and ... the even-numbered light emitting devices OEL22 and OEL24 and ... the light-emitting-device group (the 2nd group) classified as OEL2 (2Ns) -- the even-numbered switching elements SW22 and SW24 and ... it connects with each gate terminal of SW2 (2Ns) in common through the gate line G(100B) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL21-OEL22, OEL23-OEL24, and ... switching element SW21-SW22 which adjoins each other in every OEL2(2N-1)-OEL2 (2Ns), SW23-SW24, and ... for the source terminal of every SW2(2N-1)-SW2 (2Ns) each source lines I (100B)1 and I (100B)2 -- it connects in common through ... Moreover, light emitting devices OEL21, OEL22, OEL23, and OEL24 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL21, OEL22, OEL23, and OEL24... It can consider as an anode or a cathode. furthermore -- the same -- switching elements SW21, SW22, SW23, and SW24 ... and light emitting devices OEL21, OEL22, OEL23, and OEL24 -- to ... It ***** a sample hold circuit and has the capacitor for charge storages, respectively. the capacitor for charge storages of an odd number train The gate is connected to the common path cord S(100B) 1, respectively, and, as for the capacitor for charge storages of an even number train, the gate is connected to the common path cord S(100B) 2, respectively.

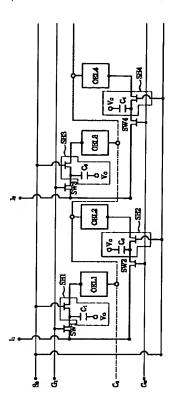
[0084] As for the light emitting device arranged to head line 100A with the luminescence equipment described above, and the contiguity light emitting device arranged to consecutiveness line 100B, it is desirable to arrange in parallel to parallel of vertical scanning, i.e., the direction of a photoconductor drum, to the move direction of a photo conductor. [0085] Drawing 12 is a drive sequence diagram in drive operation of the element illustrated to drawing 10 and 11. the source line I (100A) which becomes the relation of a contiguity light emitting device during the drive of the light-emitting-device array of head line 100A in the drive sequence illustrated to drawing 12 — the 1, 2, ..., source line I (100B) — as for the applied voltage impressed to 1, 2, and ..., it is good to set up so that it may consider as reversed polarity on the basis of C0 and the voltage average may become zero especially mutually [0086]

[Effect of the Invention] According to this invention, on having canceled the "technical problem which should solve invention" of a protomerite, and a concrete target By having changed into the conventional connector type Light Emitting Diode, and having used the new one chip light-emitting-device array by this invention The cost in the light-emitting-device array section of image formation equipment can be reduced, and the color repeatability in main scanning direction can be raised. Furthermore, since four single chip light-emitting-device arrays arranged for every photo conductor are taken from a single substrate and the luminescence property of each single chip light-emitting-device array is almost equal Since the property

compensation between each element array was omissible, the cost in at this rate was reduced sharply.

[0087] Furthermore, according to this invention, the luminescence brightness of a light emitting device was reinforced sharply, the process speed of an electrophotography copying machine was sharply raised by this, simultaneously, the number of driver ICs and the number of wiring in a printer head could be reduced sharply, and this has realized the color electrophotography copying machine of a low cost.

Drawing selection [Representative drawing]



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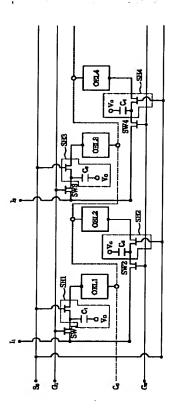
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TECHNICAL FIELD

[The technical field to which invention belongs] this invention relates to the image formation equipment which is made to correspond for every photo conductor, forms cyanogen, a Magenta, yellow, and a black picture, and forms a color picture by compounding these pictures by arranging two or more photo conductors to a single tier, and using each photo conductor independently especially, about the luminescence equipment used for the image formation equipment and this like an electrophotography copying machine.





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JAPANESE [JP,11-198433,A]

<u>CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS</u>

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PRIOR ART

[Description of the Prior Art] Prepare the laser beam light source, respectively, the oscillation of the four laser beam light sources each is made to control as an image exposure means based on cyanogen, a Magenta, yellow, and each black image information for every four electrophotography photo conductors made the single tier arrange, and it is this. The laser beam light source image formation equipment which forms a color picture is known by making cyanogen, a Magenta, yellow, and an electrostatic black latent image form for every four electrophotography photo conductors, and making these electrostatic latent images develop, and making the development picture of these plurality compound.

[0003] Moreover, it changes into the laser beam light source used with the aforementioned image formation equipment, and the Light Emitting Diode light source image formation equipment which has arranged the four Light Emitting Diode light sources for every photo conductor as the light source in which cyanogen, a Magenta, yellow, and an electrostatic black latent image are made to form is also known.

[0004] It is difficult for the present condition it to make in agreement correctly both the main scanning direction of each laser beam and the direction of vertical scanning every four laser beam light sources arranged for every four photo conductors, since the aforementioned laser beam light source image formation equipment makes in agreement cyanogen, a Magenta, yellow, and each black picture and makes them compound.

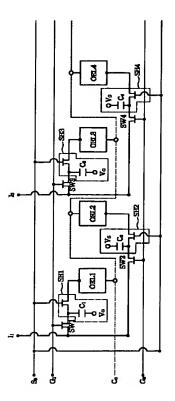
[0005] On the other hand, with the aforementioned Light Emitting Diode light source image formation equipment, although it could be made to realize comparatively simply, since the demand which makes in agreement both above—mentioned main scanning direction and directions of vertical scanning needed to use two or more Light Emitting Diode chips as the connector type Light Emitting Diode element which it comes to tie to a single tier in addition to Light Emitting Diode being expensive, it became still more expensive. Furthermore, since, as for a Light Emitting Diode chip, the luminescence property was different for every chip, it was made to expose by the same connector type Light Emitting Diode element as the above, and the exposure condition was different for every luminescence property of a chip in main scanning direction, consequently the horizontal—scanning exposure whole region to movement of a photo conductor worsened picture repeatability of main scanning direction.

[0006] Moreover, in the electrophotography copying machine which can form a color picture, the luminescence property between two or more of said connector type Light Emitting Diode elements arranged for two or more photo conductors of every even in this case although it needed to tie and the mold Light Emitting Diode element needs to be arranged for two or more photo conductors of every was different, and the difficult demand which has been arranged for every photo conductor and which ties and adjusts the luminescence property between mold Light Emitting Diode elements had newly occurred.

[0007]

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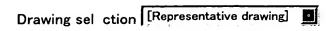
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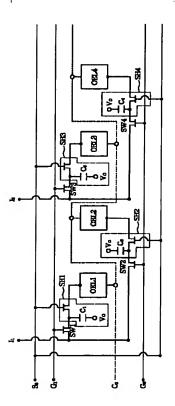
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EFFECT OF THE INVENTION

[Effect of the Invention] According to this invention, it is the foregoing paragraph.





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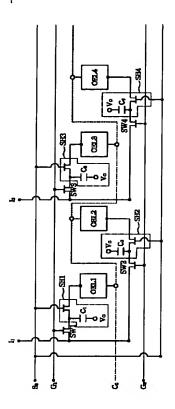
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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] The image formation equipment with which Object of the Invention used the connector type Light Emitting Diode element for the aligner, The variation of the luminescence property in main scanning direction which had become a problem especially in the electrophotography copying machine is canceled. The number of drive wiring and the number of drive circuit chips of a printer head are reduced sharply, luminescence brightness is raised to sufficient size with this, and it is in the point which brings forward the process speed of an electrophotography copying machine sharply by this.

[0008] Furthermore, Object of the Invention increases the luminescence time of a light emitting device sharply, and is in longer **** sharply about the life of a printer head.





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JAPANESE [JP,11-198433,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

* NOTICES *

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MEANS

[Means for Solving the Problem] The light-emitting-device array which has the light emitting device which has arranged two or more this inventions the 1st to the main scanning direction to the move direction of a. photo conductor and b. photo conductor, The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- The driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously, To the image formation equipment which ****, it has the 1st feature. to the 2nd a. photo conductor, b. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor, [two or more] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the exposure means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned

1st wiring group -- the 2nd scanning signal -- impr ssing -- the 2nd wiring group -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 2nd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 3rd, The SUITCHINGU element array which has two or more SUITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SUITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 3rd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 4th, The SUITCHINGU element array which has two or more SUITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SUITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SUITCHINGU elements The 1st wiring group in every [to which the 1st terminal of a SUITCHINGU element is connected in common] line, Two or more 2nd wiring groups which wired independently for every SUITCHINGU element for every line of this the line whole [to which the 2nd terminal of a SUITCHINGU element is connected], It has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of the exposure means and c. multi-line which perform exposure to the aforementioned photo conductor. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. other 2nd wiring groups of two or more 2nd wiring groups -- this -- it is made to synchronize with the 1st scanning signal, the voltage signal of another side polarity is impressed, and the capacitor based on this voltage signal discharges simultaneously -- as -- the aforementioned simultaneous

luminescence circuit Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed, it operates -- making -- the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the image formation equipment which has the 2nd driving means which operate the afor mentioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has th 4th feature and has the light emitting device arranged on the other hand to the 5th at **, [two or more] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element it has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to a luminescence means to perform simultaneous luminescence from this light-emitting-device array, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 5th feature and has the light emitting device arranged on the other hand to the 6th at **, [two or more] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the luminescence means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 6th feature and has two or more trains and the light emitting device which carried out multi-line arrangement in the 7th, Have two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line by this are classified into two or more groups. The 1st wiring group to which

the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements, The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element of this, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. and the 1st wiring group of c. above -- the 1st scanning signal -- impressing -- the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously Have the light-emitting-device array which has the 7th feature and has two or more trains and the light emitting device which carried out multi-line arrangement in the 8th, and two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. by this The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line are classified into two or more groups. The 1st wiring group for every [to which the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements] line, Two or more 2nd wiring groups to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element for every line of this and which wired independently for every line, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, c. The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of a multi-line. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed, the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -impressing -- the 2nd wiring group besides the above -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously, it has the 8th feature.

[0010] In the 1st example of a mode with a desirable this invention, the aforementioned light emitting device is an element which has an organic light emitting device.

[0011] In the 2nd example of a mode with a desirable this invention, the aforementioned photo conductor is organic or an inorganic electrophotography photo conductor.

[0012] In the 4th example of a mode with a desirable this invention, the aforementioned SUITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and the 2nd terminal of the above is a source terminal.

[0013] In the 5th example of a mode with a desirable this invention, one chip fabrication of the aforementioned SUITCHINGU element array is carried out.
[0014]

[Embodiments of the Invention] The example of this invention is explained according to a drawing. <u>Drawing 1</u> is the cross section of the image formation equipment which used the luminescence equipment of this invention as an aligner, especially a color electrophotography copying machine.

[0015] Printed material, such as a form, is contained by the cassette 6 and makes printed mat rial feed to a mechanical component towards the conveyance section in the color copying machine shown in this drawing with operation of image formation (henceforth a print) from a cassette 6. The conveyance belt 31 can carry out the both-way run of between a roller 35 and rollers 36 and 37 by carrying out the suspension of the conveyance belt 31 between the drive roller 35 and two follower rollers 36 and 37, forming the conveyance section in it, and carrying out the rotation drive of the drive roller 35 by the motor 38 here. In addition, the direction which runs is a direction shown in the arrow A in drawing in the belt 31 bottom.

[0016] The image formation units Pa, Pb, Pc, and Pd of four units are formed along the direction where the conveyance belt 31 extends. These image formation units Pa, Pb, Pc, and Pd have the respectively same composition, and explain the composition roughly hereafter taking the case of the image formation unit Pa of the 1st amorous glance.

[0017] In the image formation unit Pa, the cylinder-like photo conductor which approaches the conveyance belt 31 and rotates in the direction of arrow B, i.e., photoconductor drum 1a, is arranged. The photosensitive layer of the front face is uniformly charged with rotation of photoconductor drum 1a by primary electrification machine 4a constituted from zone-of-contact electrical machinery. Then, the light figure of the yellow component of a manuscript picture is exposed by luminescence from exposure means 8a using the aforementioned one chip light-emitting-device array which exposes the horizontal-scanning whole region of a photoconductor drum, and a yellow component static latent image is formed in this electrification photosensitive layer of it. The portion in which this latent image was formed moves by the rotation one by one, reaches the position of yellow development counter 2a, is developed by the yellow toner supplied from yellow development counter 2a in the position, and is visualized.

[0018] A yellow toner image results in an imprint part with corona-electrical-charging machine 3a prepared through the conveyance belt 31 with this drum 1a by rotation of photoconductor drum 1a. Timing is doubled with this and printed material is conveyed by the imprint part with the conveyance belt 31. Next, by impressing imprint bias to corona-electrical-charging machine 3a, the yellow toner image on photoconductor drum 1a is imprinted on printed material with rotation of photoconductor drum 1a, and goes.

[0019] Then, with rotation of photoconductor drum 1a, the toner which remains on it is removed by cleaning equipment (not shown), and will be in the state where it can go into the following image formation process. On the other hand, the printed material by which the yellow toner image was imprinted is conveyed with the conveyance belt 31 by the print section by the image formation unit Pb of the 2nd amorous glance.

[0020] The image formation unit Pb of the 2nd amorous glance is the same composition as the image formation unit Pa of the 1st amorous glance mentioned above, and like the above by luminescence from exposure means 8b using the one chip light-emitting-device array The light figure of the Magenta component of a manuscript picture is exposed, a Magenta component static latent image is formed, development by the Magenta toner is performed, and in the imprint section, on printed material, the obtained Magenta toner image lays on top of the yellow toner

image of the 1st amorous glance, and is imprinted. Similarly, with conveyance of printed material, you form a cyanogen component static latent image and a black component static latent image, respectively, a cyano toner image and a black toner image make it imprint in piles in each process by luminescence by the exposure meanses 8c and 8d using each one chip light-emitting-device array in the image formation units Pc and Pd, and the color picture which piled up the toner image of four colors on printed material is formed.

[0021] In the image formation units Pb, Pc, and Pd of the 2nd amorous glance of the above, the 3rd amorous glance, and the 4th amorous glance Photoconductor drums 1b, 1c, and 1d, Magenta development counter 2b, cyano development counter 2c and 2d of black development counters, the corona-electrical-charging machines 3b, 3c, and 3d, and the primary electrification machines 4b, 4c, and 4d constituted from zone-of-contact electrical machinery are used like the image formation unit Pa of the 1st amorous glance, respectively.

[0022] After ending the stroke of the image formation units Pa, Pb, Pc, and Pd, after the printed material by which the toner image of four colors was imprinted is conveyed further and discharged with the separation electric discharge vessel 7, it dissociates from the conveyance belt 31 and it is sent to fixing equipment 5 equipped with the fixing roller 51 and the pressurization roller 52 of a couple. Here, usually, pressurization and heating are performed by the nip section of the rollers 51 and 52 currently heated by predetermined temperature, and fixing of an imprint toner image is performed. Then, printed material is discharged by outside the plane [of a copying machine].

[0023] $\underline{\text{Drawing 2}}$ is a block diagram illustrating the detail of the image formation units Pa, Pb, Pc, and Pd illustrated to $\underline{\text{drawing 1}}$.

[0024] The exposure meanses 8a, 8b, 8c, and 8d which the image formation units Pa, Pb, Pc, and Pd were made to correspond to photoconductor drums 1a, 1b, 1c, and 1d, respectively, and have been arranged are loaded with light-emitting-device array 200 for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. Such light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black It lets the wiring sections 201a, 201b, 201c, and 201d which consist of a high-density outgoing line, respectively pass. Yellow signal drive circuit (IC) connect with 202a, Magenta signal drive (circuit IC) 202b, cyano signal drive (circuit IC) 202c, and black signal drive (circuit IC) 202d, and by operation by these drive circuits Each light emitting device is controlled by either luminescence or un-emitting light. According to the picture signal from yellow signal generating circuit 204a, Magenta signal generating circuit 204b, cyano signal generating circuit 204c, and 204d of black signal generating circuits, it is set up so that luminescence operation of a light-emitting-device array can be controlled. The light emitting device used by above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black forms the array (array object) which the single tier was made to arrange by the high resolution of for example, 1200dpi.

[0025] Moreover, in light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black, the following switching element circuit and the sample hold circuit are formed, and the timing of each drive operation of the gate line in these circuits is controlled by gate drive circuit 203for yellow a, gate drive circuit 203for Magentas b, gate drive circuit 203for cyanogen c, and 203d of gate drive circuits for black. And control of the picture signal of control of this gate drive operation and yellow, a Magenta, cyanogen, and a black signal is performed by the image-information-processing equipment 205 in CPU (not shown).

[0026] The one chip light-emitting-device array which has covered and arranged the whole region of the horizontal-scanning distance D in the main scanning direction to the rotation of photoconductor drums 1a, 1b, 1c, and 1d is used light-emitting-device array 200for yellow a

used by this invention, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. These light-emitting-device arrays 200a, 200b, 200c, and 200d are accumulated on the one chip in which two or more light emitting devices arranged 600 dpi by the above 1200dpi resolution which is high resolution, or the high resolution beyond it cover the whole region of the horizontal-scanning distance D of a photo conductor.

[0027] By the desirable example of this invention, the above-mentioned one chip light-emitting-device array used by above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black is created from the single substrate which lower-**, and uses for four what carried out cutting separation and was obtained, respectively. [0028] The arrow C in drawing shows the direction of vertical scanning of the photo conductor which rotates, moreover, photoconductor drums 1a, 1b, 1c, and 1d The aluminium pipe of the same diameter (for example, the diameter of 60cm, 30cm, 20cm) was used, the photosensitive layer (for example, an organic photoelectrical body whorl with four [same] or the same a-Si photosensitive layer) of the same kind was used, therefore the traverse speed of the direction C of vertical scanning was set up identically respectively.

[0029] <u>Drawing 3</u> is the perspective diagram of the one chip light-emitting-device array substrate 300 in the process before carrying out cutting separation along with the cutting part lose contact 302 four, respectively from the glass substrate 303 used as the single substrate which formed the one chip light-emitting-device array 301 used by the above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black prepared on the glass substrate 303.

[0030] If it is the size which can form a light-emitting-device array by the one chip, there will be especially no limit in the size of the glass substrate 303 used by this invention.

[0031] Drawing 4 illustrates the equal circuit for every one chip light-emitting-device array 301 illustrated to drawing 3. light emitting devices OEL1, OEL2, OEL3, and OEL4 -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged and it connects with a single tier in an active-matrix circuit this active-matrix circuit -- switching elements SW1, SW2, SW3, and SW4 -- as ... using TFT -- suitable -- **** -- the odd-numbered light emitting devices OEL1 and OEL3 and ... the light-emitting-device group (the 1st group) classified as OEL (2N-1) It connects with each gate terminal of SW (2N-1) in common through the gate line G1. the odd-numbered switching elements SW1 and SW3 and ... the even-numbered light emitting devices OEL2 and OEL4 and ... the light-emitting-device group (the 2nd group) classified as LEL (2Ns) -- the even-numbered switching elements SW2 and SW4 and ... it connects with each gate terminal of SW (2Ns) in common through the gate line G2 the above "N" -- 1, 2, 3, 4, and 5 -- it is the integer of ... and light-emitting-device OEL1-OEL2 which adjoins each other in this active-matrix circuit, OEL3-OEL4, and ... switching element SW1-SW2 which adjoins each other in every OEL(2N-1)-OEL (2Ns), SW3-SW4, and ... the source terminal of every SW(2N-1)-SW (2Ns) -- each source lines I1 and I2 -- it connects in common through ... Moreover, light emitting devices OEL1, OEL2, OEL3, and OEL4 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL1, OEL2, OEL3, and OEL4... It can consider as an anode or a cathode.

[0032] the desirable example of this invention — switching elements SW1, SW2, SW3, and SW4 ... and light emitting devices OEL1, OEL2, OEL3, and OEL4 — sample hold circuits SH1, SH2, SH3, and SH4 and ... are connected between ... These sample hold circuits SH1, SH2, SH3, and SH4 and ... respectively — the capacitors C1, C2, C3, and C4 for charge storages ... having — **** — the capacitors C1, C2, C3, and C4 for these charge storages ... Connect with the switching element for sample hold which connected the gate to the common path cord S0,

respectively, and it is made to synchronize with the rotation of a photoconductor drum, and it is set up so that the gat of the switching element for sample hold may turn on or turn off in predetermined interval time. Under the present circumstances, capacitors C1, C2, C3, and C4 for charge storages ... A counter electrode is set as a ground or predetermined DC bias VG. Moreover, according to an outside temperature, a time (lifetime), etc., it can carry out adjustable [of the amount of bias of this predetermined DC bias VG].

[0033] Drawing 5 is illustrating the drive of the active-matrix circuit illustrated to drawing 4. In the first half of 1 horizontal-scanning period corresponding to one scanning interval by the laser to a photoconductor drum, it is made to synchronize with the gate-on pulse to the gate lines G1 and G2, and the pulse of the peak value which answered the picture signal which is a polar voltage signal (polarity is based on the applied voltage to a path cord C0) on the other hand is impressed to the source lines I1 and I2. This one side polarity voltage signal is made to respond to the gradation information on image information, and each peak value is set up. Moreover, in another desirable example, it can be made to be able to respond to the gradation information on image information, and pulse width or a pulse number can be changed. a path cord S0 -- the capacitors C1, C2, C3, and C4 for charge storages -- the charge by which accumulation maintenance was carried out as image information at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 -- in order to carry out order electric discharge to ... and to make light emit, the gate-on pulse for setting the gate of the switching element for sample hold as ON is impressed the impression time of this gate-on pulse -- the capacitors C1, C2, C3, and C4 for charge storages -- it is set up so that it may be made to operate, after a charge is fully charged by ...

[0034] As for the pulse of a polar voltage signal, on the other hand in the second half of 1 continuing horizontal-scanning period, it is desirable for the voltage signal of reversed polarity to be impressed and to set a voltage average with a voltage signal as zero in the first half a voltage signal and the second half in this case, and to set [which was synchronized with the gate-on pulse to the gate lines G1 and G2, and was used for source line I1I2 in the period of the first half] up so that DC component may be lessened as much as possible, the operation same to a path cord S0 as the time of the first half — the capacitors C1, C2, C3, and C4 for charge storages — the charge by which accumulation maintenance was carried out at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 — it reverse-discharges to ... The state where light is not emitted is formed by this reverse electric discharge.

[0035] <u>Drawing 6</u> illustrates one of the desirable examples of the light-emitting-device array of this invention. this light-emitting-device array — the [the 1st light-emitting-device array block, the 2nd light-emitting-device array block, and] — it is classified into three blocks which consist of 3 light-emitting-device array blocks, and the circuit which illustrates every block to <u>drawing 4</u> is incorporated under the present circumstances, in the example of <u>drawing 6</u>, it is set as the wiring for a time-sharing drive with three time sharing — having — every block — the [the 1st gate line block (G11, G12, G13), the 2nd gate line block (G21, G22, G23), and] — 3 gate line block (G31, G32, G33) is wired The source line corresponding to an information signal line may be wired in common for every light-emitting-device array block, and can decrease the number of wiring by this. Moreover, for every light-emitting-device array block, an information line can also be wired independently and the time of 1 horizontal-scanning period can be sharply shortened by this.

[0036] the [the 1st light-emitting-device array block the 2nd light-emitting-device array block, and] — in the first half, 3 light-emitting-device array block has a scan in the first half a scan and the second half, respectively, and it produces order electric discharge by scan, and in the second half, it impresses a gate-on pulse to path cords S1, S2, and S3 so that reverse electric discharge may be produced by scan Moreover, in the first half, reverse electric discharge may be produced by scan and order electric discharge may be produced by scan in the second half. [0037] <u>Drawing 7</u> is illustrating the example of a drive of the light-emitting-device array of

drawing 6. The charge to the capacitor for charge storages is started by the impression start of the gate—on pulse to the 1st gate line block (G11, G12, G13), and the electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate—on pulse to a path cord S1. By this, luminescence from a light emitting device can be operated simultaneously the whole block. Then, the charge to the capacitor for charge storages is started by the impression start of the gate—on pulse to the 1st gate line block (G11, G12, G13), and the reverse electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate—on pulse to path cords S1, S2, and S3.

[0038] Reach the 2nd gate line block (G21, G22, G23), it is made to operate one by one like the above also about the 3rd gate line block (G31, G32, G33), and 1 horizontal scanning is performed.

[0039] Drawing 8 shows the cross section about 1 bit of the element structure used in the circuit illustrated to drawing 4. Among drawing, 801 are a substrate and insulators, such as glass and plastics, are used. On the substrate, the switching element section SW1, the sample hold circuit section SH1, and the light-emitting-device section OEL1 are formed. The switching element section SW1 has the 1st transistor structured division constituted by the gate electrode 802, the gate insulator layer 803, the thin-film-semiconductor layer 804, the source electrode 805, and the drain electrode 806. The sample hold circuit section SH1 has the 2nd transistor structured division constituted by the capacitor section for charge storages constituted by the insulator layer 809 prepared in inter-electrode [of the electrode 807-808 of a couple, and this couple] and the gate electrode 810, the gate insulator layer 811, the thin-film-semiconductor layer 812, the source electrode 813, and the drain electrode 814. The light-emitting-device section OEL1 is the light-emitting-device section constituted by the luminous layer 817 prepared in inter-electrode [of the electrode 815-816 of a couple, and this couple].

[0040] the [the 1st used by this invention, and] — as thin-film-semiconductor layers 804 and 812 of 2 transistor sections, a thin film amorphous silicon, thin film polycrystal silicon, or single-crystal-thin-film silicon can be used, and a thin film silicon nitride and thin film tantalum oxide can be used as gate insulator layers 803 and 811 Moreover, as for the electrode of a couple used in the light-emitting-device section OEL1, it is desirable to use one of these as an anode, to use another side as a cathode, and to use reflection nature metal membranes, such as aluminum, silver, zinc, gold, and chromium, as an electrode of another side, using transparent electric conduction films, such as ITO (an indium and stannic-acid ghost) and a tin oxide, as an electrode corresponding to the luminescence direction of radiation.

[0041] Moreover, in order to prevent degradation of a luminous layer in this invention, a wrap's is desirable by the sealing agent in this luminous layer. As this sealing agent, organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0042] Next, although the luminous layer 817 suitably used by this invention is organic electroluminescence (OEL), inorganic [EL] can also be used for it by this invention. [0043] The example of OEL which can be used by this invention is indicated below. [0044] As a material in OEL used by this invention EPA349,265 of Scozzafava; (1990) U.S. patent No. 4,356,429; [of Tang] U.S. patent No. 4,539,507; [, such as VanSlyke,] U.S. patent the 4,720,432;, such as VanSlyke U.S. patent No. 4,769,292; [, such as Tang,] U.S. patent No. 4,885,211; [, such as Tang,] U.S. patent the 4,950,950;, such as Perry U.S. patent No. 5,059,861; [, such as Littman,] U.S. patent No. 5,047,687; [of VanSlyke] U.S. patent No. 5,073,446; [, such as Scozzafava,] U.S. patent No. 5,059,862; [, such as VanSlyke,] The thing of an indication can be used [U.S. patent / of VanSlyke etc. / No. 5,061,617 /; U.S. patent / of VanSlyke / No. 5,151,629 /; U.S. patent / of Tang etc. / No. 5,294,869 /; U.S. patent / of Tang etc. / No. 5,294,870]. EL layer consists of organic hole pouring in contact with an anode plate and a move

band, and the electron injection and move band that form organic hole pouring, and a move band and junction. Hole pouring and a move band may be formed from a single material or two or more single material, and consist of a hole pouring layer in contact with the continuous hole moving bed infixed between an anode plate and a hole pouring layer, an electron injection, and a move band. Similarly, an electron injection and a move band may be formed from single material or two or more material, and consist of an electron-injection layer in contact with the continuous electronic—transition layer infixed between an anode plate and an electron-injection layer, hole pouring, and a move band. A hole, electronic reunion, and luminescence are generated within the electron injection which adjoins junction of an electron injection, a move band and hole pouring, and a move band, and a move band. Although it deposits by vacuum evaporationo typically, it deposits with other conventional technology again, and deals in the compound which forms an OEL layer.

[0045] The organic material which consists of a hole pouring layer in the desirable example is : [0046] which has the following general formulas.

[External Character 1]

$$T_1$$
 T_1
 T_2
 T_1
 T_2
 T_1
 T_2

A metal, a metallic oxide, or the metal halogenides T1 and T2 fill both the unsaturation six membered rings in which N or C-RM expresses hydrogen, or :Q contains a displacer like an alkyl or a halogen here. While a desirable alkyl portion contains the carbon atom of about 1 to 6, it constitutes an allyl-compound portion with a desirable phenyl.

[0047] In the desirable example, the hole moving bed is an aromatic tertiary amine. The desirable subclass of an aromatic tertiary amine is : [0048] containing the tetrapod allyl-compound diamine which has the following formulas.

[External Character 2]

$$R_7$$
 N — Are_n — N
 R_8
 R_9

Are is a propine group here, n is the integer of 1 to 4, and it is Ar, R7, R8, and R9. It is the allyl-compound group chosen, respectively. In the desirable example, luminescence, an electron injection, and a move band contain a metal oxy-NOIDO (oxinoid) compound. The desirable example of a metal oxy-NOIDO compound is : [0049] which has the following general formulas. [External Character 3]

$$\begin{bmatrix} R_6 & R_7 \\ R_6 & Q \\ R_4 & N \\ R_8 & R_2 \end{bmatrix}$$

$$\begin{bmatrix} R_7 & R_6 \\ Q & R_6 \\ N & R_4 \\ R_2 & R_3 \end{bmatrix}$$

$$\begin{bmatrix} R_7 & R_6 \\ Q & R_6 \\ N & R_4 \\ R_2 & R_3 \end{bmatrix}$$

It is R2-R7 here. Replacement possibility is expressed. At other desirable examples, a metal oxy-NOIDO compound is: [0050] which has the following formulas. [External Character 4]

$$\begin{array}{|c|c|c|c|}
\hline
R_6 & R_7 \\
R_5 & O \\
R_4 & N \\
\hline
R_8 & R_2 \\
\hline
\end{array}$$

$$\begin{array}{|c|c|c|c|c|}
\hline
L_1 & L_2 \\
\hline
L_6 & L_4 \\
\hline
\end{array}$$

here -- R2-R7 a definition is given above -- having -- L1-L5 -- intensive -- 12 or a fewer carbon atom -- containing -- respectively -- separate -- the hydrogen or the carbohydrate group of a carbon atom of 1 to 12 -- expressing -- L1 and L2 -- both -- or both L2 and L3 can form the united benzo ring In other desirable examples, metal oxy-NOIDO compounds are the following formulas.

[0051]

[External Character 5]

$$\begin{bmatrix} R_5 & R_6 \\ R_4 & O \\ R_3 & N \end{bmatrix}$$

It is R2-R6 here. Hydrogen or other replacement possibility are expressed. It is only that the above-mentioned example expresses the existing desirable organic material which is only used within an electroluminescence layer. It does not mean that they restrict the visual field of this invention, and, generally this directs an organic electroluminescence layer. Organic EL material contains the coordination compound which has an organic ligand so that the above-mentioned example may show.

[0052] As a segment electrode 403 used by the light emitting device of this invention, reflection nature metals, such as aluminum, silver, zinc, gold, and chromium, can be used, and transparent electric conduction films, such as indium teens OKISAIZU and a tin oxide, can be used as a counterelectrode 402.

[0053] As a sealing agent 405 used by this invention, it is closed with organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy. Moreover, as a protective layer 404 used by this invention, the coat material by organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0054] With the image formation equipment of this invention, inorganic photo conductive materials, such as organic photo conductive materials, such as BENZO oxazole system photo conductor matter, BENZO thiazole system photo conductor matter, and triphenylamine system photo conductor matter, or amorphous silicon (a–Si) photo conductor matter, amorphous silicon germanium alloy (a–SiGe) photo conductor matter, and amorphous silicon carbon alloy (a–SiC) photo conductor matter, can be used as a photo conductors [1a, 1b, 1c and 1d] photosensitive layer.

[0055] Thus, on the created element, 150nm of silicon nitrides was formed in the spatter, and the protective layer was formed for closure. In addition, protective—layer formation performed membrane formation within the same vacuum system from organic layer membrane formation. [0056] What has a big work function as an anode material organic [Light Emitting Diode] is desirable, and can use a tin oxide, gold, platinum, palladium, a selenium, iridium, copper iodide, etc. other than ITO used by this example.

[0057] On the other hand, what has a work function small as a cathode material is desirable, and can use Mg, aluminum, Li, In(s), or these alloys other than Mg/Ag used by this example.

[0058] About an electron hole transporting bed, the hole transportability compound expressed to the following table other than TPD can be used.

[0059] Moreover, you may use not only an organic material but inorganic material. a-Si, a-SiC, etc. are raised as inorganic material used.

[0060] As an electronic transporting bed, it is Alq3. The electronic transportability compound otherwise expressed to the following table can be used.

[0061] Moreover, dopant coloring matter as shown in the following table 10 can also be doped to an electronic transporting bed or an electron hole transporting bed.

[0062] As for a material organic [Light Emitting Diode], it is desirable to choose what considers spectrum luminescence with sensitivity as the photoconductor drum to be used. [0063]

[External Character 6]

$$\begin{array}{c|c} \hline \bigcirc \\ N - \hline \bigcirc \\ \hline \\ CH_s \end{array}$$

[0064] [External Character 7] ホール輸送性化合物

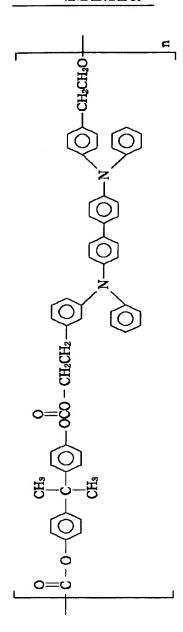
$$\begin{array}{c|c} CH_3 & & & \\ \hline \\ CH_2 & & & \\ \hline \end{array} \\ N & & & \\ \hline \\ CH_3 & & \\ \\ CH_3 & & \\ \hline \\ CH_3 & & \\ CH_3 & & \\ \hline \\ CH_4 & & \\ \hline \\ CH_5 & & \\ CH_5 & & \\ \hline \\ CH$$

$$CH_3$$
 \longrightarrow N \longrightarrow $CH = CH$ \longrightarrow CI

[0065]

[External Character 8]

ホール輸送性化合物



[0066] [External Character 9]

ホール輸送性化合物

$$C_2H_5$$
 C_2H_5
 C_2H_5
 C_2H_5
 C_2H_5

$$CH = N - N$$

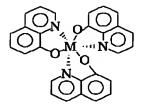
$$C_{2H_5}$$

$$\begin{array}{c|cccc} CH_{3} & CH_{2} & \\ CH_{3} & CH_{4} & \\ CH_{5} & CH_{5} & \\ \hline \\ CH_{5} & \\ CH_{5} & \\ \hline \\ CH_{5} & \\ CH_{5} & \\ \hline \\ CH_{5} & \\ \hline \\ CH_{5} & \\ CH_{5} & \\ \hline \\ CH_{5} & \\$$

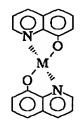
[0067] [External Character 10]

ホール輸送性化合物

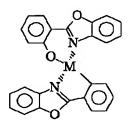
[0068] [External Character 11]



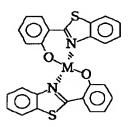
M: Al, Ga



M: Zn, Mg, Be



M: Zn, Mg, Be



M: Zn, Mg, Be

[0069]

[External Character 12]

$$CH_3- CH_3 \\ CH_3 \\ CH_3$$

$$CH_3 - C \longrightarrow N \longrightarrow N \longrightarrow N \longrightarrow N \longrightarrow CH_3$$

[0070]

[External Character 13]

[0071]

[External Character 14]

19/23

$$\bigcirc - CH = CH - \bigcirc - CH = CH - \bigcirc$$

$$\bigcirc C = CH - CH = C$$

$$\bigcirc C = CH - \bigcirc CH = C$$

[0072]

[External Character 15]

[0073] <u>Drawing 9</u> is the light emitting device of another desirable mode of this invention. The luminous layer 817 which the same thing as the switching element section SW1 and the sample hold circuit section SH1 which were used by <u>drawing 8</u> was prepared on the downward substrate 801, and was prepared in inter-electrode [of the electrodes 816 and 815b of the couple for forming a 1-bit light-emitting part on the upper substrate 901 (insulating substrates, such as glass) and this couple] is arranged. The substrates 801 and 901 of these couples carry out opposite arrangement towards the inside, and electrode 815a on a substrate 801 and electrode 815b on a substrate 901 are electrically connected by the electroconductive glue (adhesive electrical connection object) 902.

[0074] The adh sive electrical connection object 902 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry this by adoption of screen printing, offset printing, or the dispenser applying method using the electroconductive glue by which distributed content of a conductive particle like a carbon particle, and a silver-granule child and a copper particle was carried out into an epoxy system

or phenol system heat-curing adhesives.

[0075] In order to reinforce interface adhesive strength, silane coupling agents, such as N-(2-aminoethyl)-3-aminopropyl methyl dimethoxysilane, N-(2-aminoethyl)-3-aminopropyl trimethoxysilane, 3-aminopropyl methyldiethoxysilane, and 3-glycidoxypropyltrimetoxysilane, can be made to contain in an above-mentioned lectroconductive glue.

[0076] A pewter etc. is mentioned as other examples of the adhesive electrical connection object 902.

[0077] The adhesive electric insulation object 903 is formed in the periphery section of the above-mentioned adhesive electrical connection object 902. The adhesive electric insulation object 903 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry an epoxy system or phenol system insulation adhesives by methods, such as offset printing, screen printing, or the dispenser applying method. Under the present circumstances, it is suitable to use the manufacture method of preparing an electroconductive glue to the substrate of the direction in which insulating adhesives are formed to one substrate of the upper substrate 901 or a substrate 801, and these insulating adhesives are not formed, in the application of insulating adhesives and an electroconductive glue.

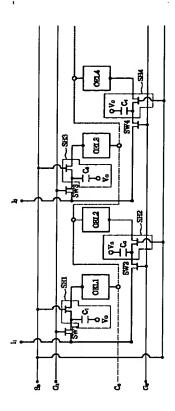
[0078] Moreover, in this invention, it can replace with the above-mentioned adhesive electric

insulation object 903, and liquid insulators, such as liquid crystal like an insulator without adhesive strength, for example, an organic solvent, a high-boiling point organic solvent, a nematic liquid crystal, cholesteric liquid crystal, and a smectic liquid crystal, can also be used. [0079] Moreover, the above-mentioned adhesive electric insulation object 903 or a non-adhesive property electric insulation object can also be made to contain coloring objects, such as a color pigment and a paint, so that it may have shading hardening. [0080] Drawing 10 is another desirable example of this invention. The luminescence equipment illustrated to drawing 10 is equipped with the parallel one chip light-emitting-device array 100 of two lines which prepared the parallel one chip light-emitting-device array located in head line 100A and consecutiveness line 100B to the move direction of photo conductors, such as a photoconductor drum. It is good that it is made to perform the writing of one line by operation of this parallel one chip light-emitting-device array 100 of two lines. [0081] Drawing 11 is the equal circuit of the parallel one chip light-emitting-device array 100 of two lines illustrated to drawing 10. The thing of the same equal circuit as the element illustrated to above-mentioned drawing 3, respectively can be used for the one chip light-emitting-device array of head line 100A and consecutiveness line 100B. [0082] the light emitting devices OEL11, OEL12, OEL13, and OEL14 of head line 100A and head line 100A with which the one chip light-emitting-device array of consecutiveness line 100B is equipped -- the light emitting devices OEL21, OEL22, OEL23, and OEL24 of ... and consecutiveness line 100B -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged, respectively and it connects with 2 parallel in an active-matrix circuit this active-matrix circuit -- switching elements SW11, SW12, SW13, and SW14 -- as ... using TFT -- suitable -- **** -- the odd-numbered light emitting devices OEL11 and OEL13 and ... the light-emitting-device group (the 1st group) classified as OEL1 (2N-1) It connects with each gate terminal of SW1 (2N-1) in common through the gate line G(100A) 1. the odd-numbered switching elements SW11 and SW13 and ... the even-numbered light emitting devices OEL12 and OEL14 and ... the light-emitting-device group (the 2nd group) classified as OEL1 (2Ns) -- the even-numbered switching elements SW12 and SW14 and ... it connects with each gate terminal of SW1 (2Ns) in common through the gate line G(100A) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL11-OEL12, OEL13-OEL14, and ... switching element SW11-SW12 which adjoins each other in every OEL1(2N-1)-OEL1 (2Ns), SW13-SW14, and ... for

the source terminal of very SW1(2N-1)-SW1 (2Ns) each source lines I (100A)1 and I (100A)2 -- it connects in common through ... Moreover, light emitting devices OEL11, OEL12, OEL13, and OEL14 ... It connects with the common line C0 in common, and a counter lectrode is each light emitting device OEL11, OEL12, OEL13, and OEL14... It can consider as an anode or a cathode. furthermore, the switching elements SW11, SW12, SW13, and SW14 ... light emitting devices OEL11, OEL12, OEL13, and OEL14 -- the same sample hold circuit as the element of drawing 3 is connected between ... This sample hold circuit is equipped with the capacitor for charge storages, respectively, the capacitor for charge storages of an odd number train connects the gate to the common path cord S(100A) 1, and the gate is connected to the common path cord S(100A) 2, and the capacitor for charge storages of an even number train is synchronized with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. [0083] the light emitting devices OEL21, OEL22, OEL23, and OEL24 of head line 100A and consecutiveness line 100B of parallel arrangement -- similarly in the active-matrix circuit linked to ... the odd-numbered light emitting devices OEL21 and OEL23 and ... the light-emitting-device group (the 1st group) classified as OEL2 (2N-1) It connects with each gate terminal of SW2 (2N-1) in common through the gate line G(100B) 1. the odd-numbered switching elements SW21 and SW23 and ... the even-numbered light emitting devices OEL22 and OEL24 and ... the light-emitting-device group (the 2nd group) classified as OEL2 (2Ns) -- the even-numbered switching elements SW22 and SW24 and ... it connects with each gate terminal of SW2 (2Ns) in common through the gate line G(100B) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL21-OEL22, OEL23-OEL24, and ... switching element SW21-SW22 which adjoins each other in every OEL2(2N-1)-OEL2 (2Ns), SW23-SW24, and ... for the source terminal of every SW2(2N-1)-SW2 (2Ns) each source lines I (100B)1 and I (100B)2 -- it connects in common through ... Moreover, light emitting devices OEL21, OEL22, OEL23, and OEL24 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL21, OEL22, OEL23, and OEL24... It can consider as an anode or a cathode. furthermore -- the same -- switching elements SW21, SW22, SW23, and SW24 ... and light emitting devices OEL21, OEL22, OEL23, and OEL24 -- to ... It ***** a sample hold circuit and has the capacitor for charge storages, respectively. the capacitor for charge storages of an odd number train The gate is connected to the common path cord S(100B) 1, respectively, and, as for the capacitor for charge storages of an even number train, the gate is connected to the common path cord S(100B) 2, respectively. [0084] As for the light emitting device arranged to head line 100A with the luminescence

[0084] As for the light emitting device arranged to head line 100A with the luminescence equipment described above, and the contiguity light emitting device arranged to consecutiveness line 100B, it is desirable to arrange in parallel to parallel of vertical scanning, i.e., the direction of a photoconductor drum, to the move direction of a photo conductor. [0085] Drawing 12 is a drive sequence diagram in drive operation of the element illustrated to drawing 10 and 11. the source line I (100A) which becomes the relation of a contiguity light emitting device during the drive of the light-emitting-device array of head line 100A in the drive sequence illustrated to drawing 12 — the 1, 2, ..., source line I (100B) — as for the applied voltage impressed to 1, 2, and ..., it is good to set up so that it may consider as reversed polarity on the basis of C0 and the voltage average may become zero especially mutually





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JAPANESE [JP,11-198433,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the cross section of the image formation equipment of this invention.

[Drawing 2] It is the block diagram of the exposure section used with the image formation equipment of this invention.

[Drawing 3] It is the perspective diagram of the one chip light-emitting-device array on the single substrate used by this invention.

[Drawing 4] It is the representative circuit schematic of the light-emitting-device array used by drawing 3.

[Drawing 5] It is the drive sequence diagram of a light-emitting-device array used by drawing 4.

[Drawing 6] It is the block diagram of another light-emitting-device array of this invention.

[Drawing 7] It is the drive sequence diagram of the light-emitting-device array illustrated to drawing 6.

[Drawing 8] It is the cross section of a light emitting device used by this invention.

[Drawing 9] It is the cross section of another light-emitting-device section used by this invention.

[Drawing 10] It is the perspective diagram of another one chip light-emitting-device array used by this invention.

[Drawing 11] It is the representative circuit schematic of the light-emitting-device array used by drawing 10.

[Drawing 12] It is the drive sequence diagram of a light-emitting-device array used by <u>drawing</u> 11.

[Description of Notations]

1a, 1b, 1c, 1d Photoconductor drum

2a, 2b, 2c, 2d Development counter

3a, 3b, 3c, 3d Corona-electrical-charging machine

4a, 4b, 4c, 4d Contact electrification machine

5 Fixing Equipment

6 Cassette

7 Separation Electric Discharge Machine

8a, 8b, 8c, 8d Exposure means

Pa, Pb, Pc, Pd Image formation unit

31 Conveyance Belt

35 Drive Roller

36 Follower Roller

38 Motor

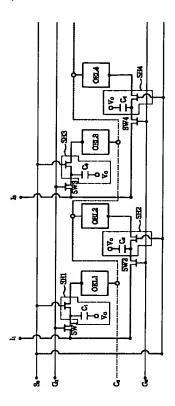
51 Fixing Roller

52 Pressurization Roller

200a The light-emitting-device array for yellow

- 200b The light-emitting-device array for Magentas
- 200c The light-emitting-device array for cyanogen
- 200d The light-emitting-device array for black
- 201 a-d Drawer wiring section
- 202a Yellow signal mechanical component
- 202b Magenta signal mechanical component
- 202c Cyano signal mechanical component
- 202d Black signal mechanical component
- 203a The gate drive circuit for yellow
- 203b The gate drive circuit for Magentas
- 203c The gate drive circuit for cyanogen
- 203d The gate drive circuit for black
- 204a Yellow signal generating circuit
- 204b Magenta signal generating circuit
- 204c Cyano signal generating circuit
- 204d Black signal generating circuit
- 205 Image-Information-Processing Equipment
- 300 One Chip Light-Emitting-Device Array Substrate
- 301 One Chip Light-Emitting-Device Array
- 302 Cutting Part Lose Contact
- 303 Glass Substrate
- 801 Substrate
- 802 810 Gate electrode
- 803 811 Gate insulator layer
- 804 812 Thin film semiconductor
- 805 813 Source electrode
- 806 814 Drain electrode
- 807 808 Couple electrode of the capacitor for charge storages
- 809 Insulator Layer
- 815 816 Couple electrode for light emitting devices
- 817 Luminous Layer

Drawing selection [R pres ntative drawing]



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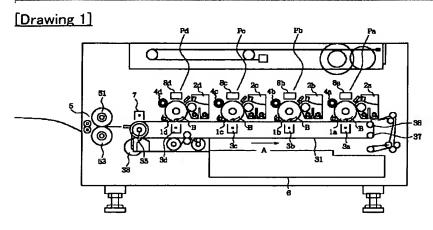
JAPANESE [JP,11-198433,A]

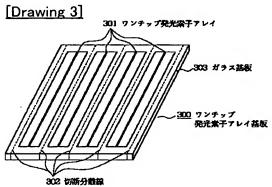
CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

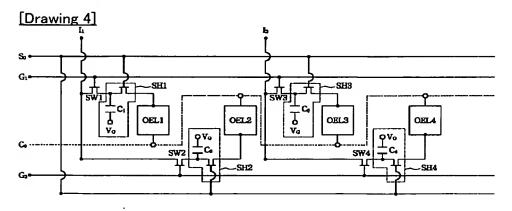
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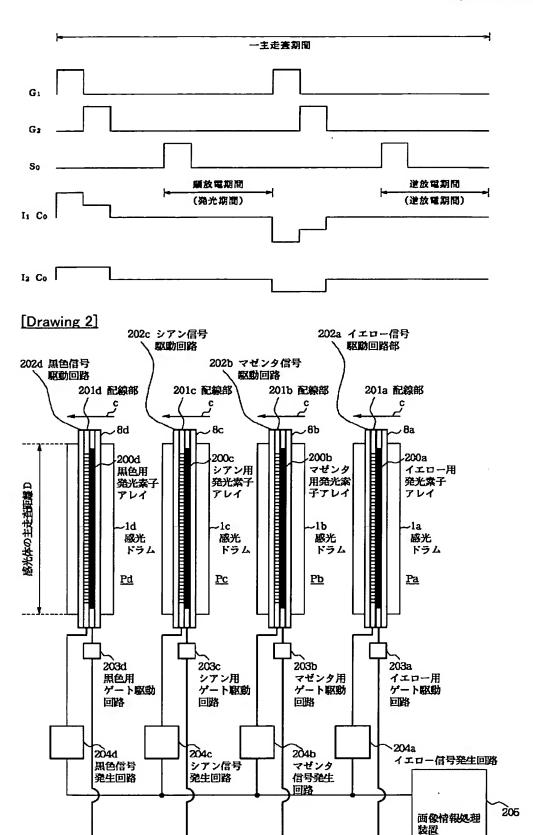
DRAWINGS



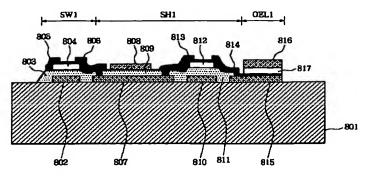


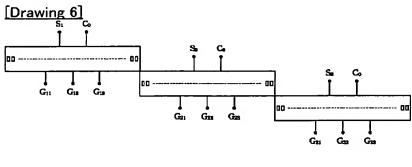


[Drawing 5]



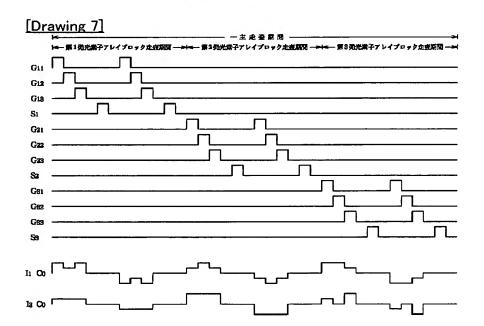
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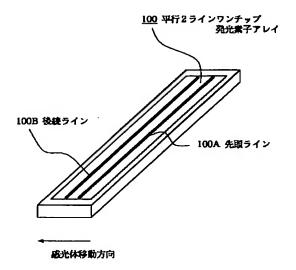


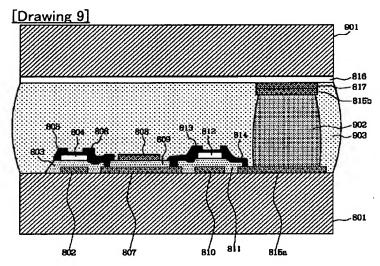


移光体の主走査距離D

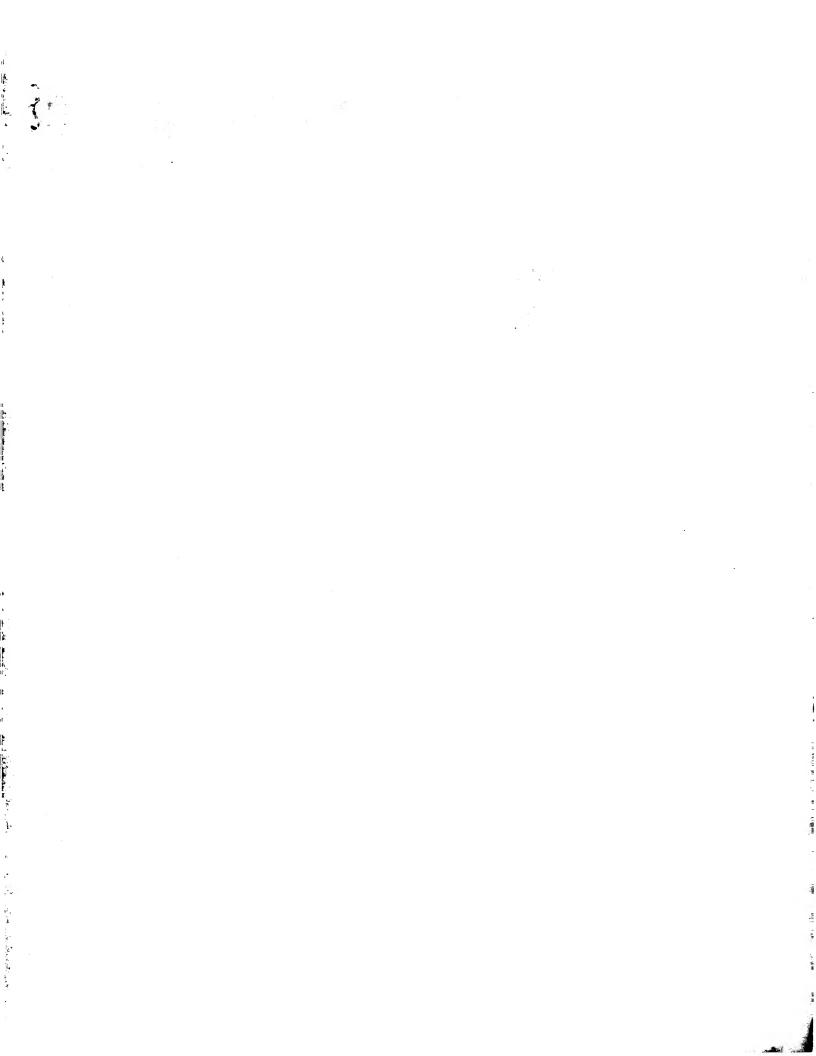


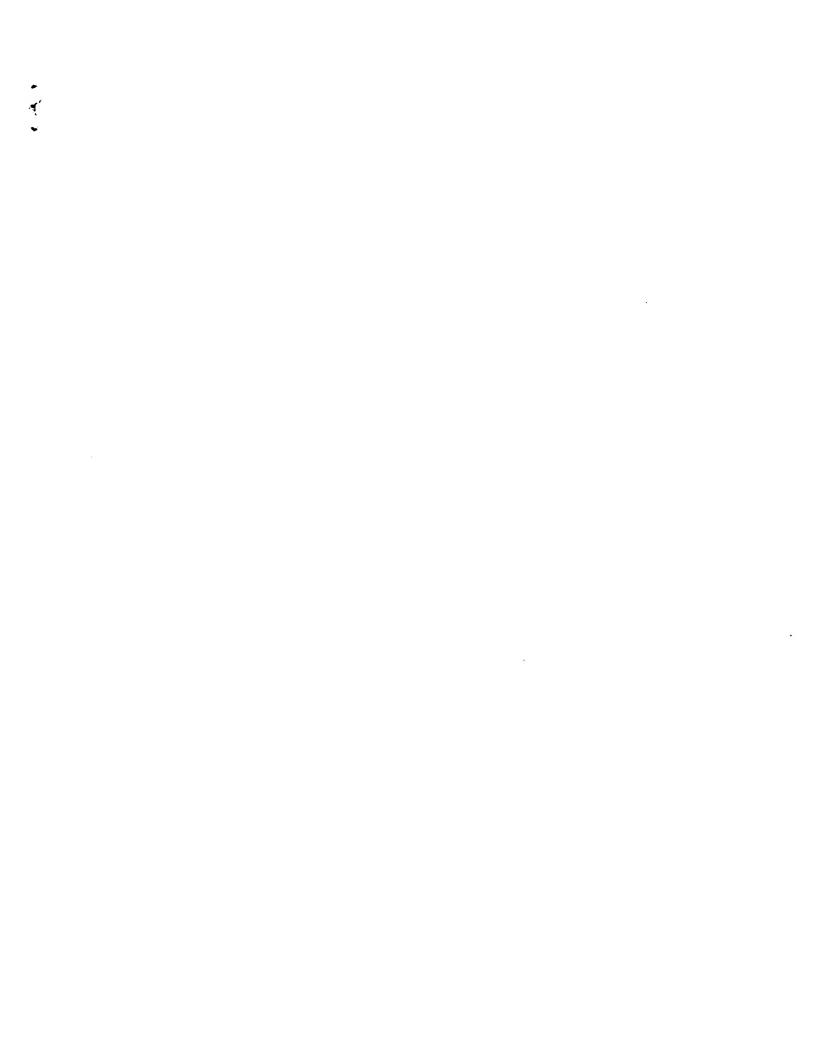
[Drawing 10]

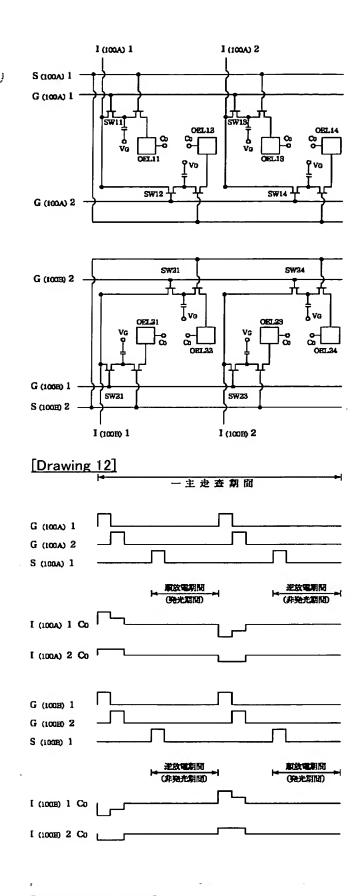




[Drawing 11]

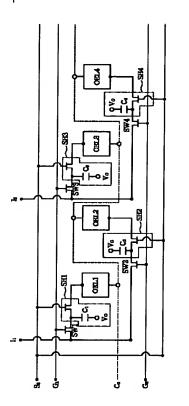








Drawing selection [Repr sentativ drawing]



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(주 왕 70 間水塔の数28 客室請求 右

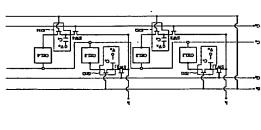
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国像形成装置及び兜光装置 (54) [98班の名称]

(57) [取称]

ンタヘッドの駆動配格数及び駆動回路チップ数を大幅に 低奴し、これとともに発光輝度を十分な大きさまで高め るのと同時に、長寿命を実現した発光装置を提供する点 主走在方向における発光特性のパラッキを解消し、プリ 配子写其核写機において問題となっていた。

イ、ロスイッチング班子アフィを複数の群に区分し、数 接続させる第2配袋群、及び鞍発光辮子アレイを同時に 一方向に複数配置した発光報子を有する 発光塀子アレイ、蚊発光塀子毎に接続させて配置した紋 区分された複数のスイッチング琳子の群毎に、スイッチ ング架子の第1端子を共通に接続させる第1配線群、数 **メイッチング琺中街に、スイッチング琺中の概2 越十や** 発光させる回路を有し、蚊発光珠子アレイからの同時発 光を実行させる発光手段、並びに交流電圧駆動手段を有 数のスイッチング駐子を有するスイッチング駐子アレ [解决手段]



「請求項2】 前配発光架子は、有機発光報子を有する (請求項3) 前記数光体は、恒子写其感光体である請

珠子 かめる諸女頃 1 に記載の画像形成装置。

放電するように前配同時発光回路を動作させる駆動手段

を有する画像形成装置。

(请求項4) 前配電子写真感光体は、有機電子写真感 (请求項5) 前記電子写其感光体は、無機電子写其感 (請求項6) 自配無数配子等項数光体は、アモルファ 光体である請求項3に記載の画像形成設置。 4.体でもる諸女囚3に記載の画像形成装置。 **水頂1に記載の画像形成滋置。**

スシリコン電子写真感光体である請求項5に記載の画像 形成装置

村配スイッチング珠子は、苺取トランジ スタであり、前配第1端子は、ゲート端子であり、そし て前記第2端子は、ソース端子である請求項1記載の画 請求項7] 复形成装置

(静水項9) 前配同時発光回路は、サンプルホールド 回路を有している回路である請求項1配載の画像形成装 村記スイッチング琳子アフイは、ワンチ ップ成形されている諸求項1記載の画像形成装置。

福水恒8]

の群に区分し、核区分された複数のスイッチング第子の た発光栞子を有する発光塀子アレイ、敵発光琛子毎に投 ッチング財子アフイ、類スイッチング財子アフイを拉数 b. 感光体の移動方向に対する主走査方向に複数配置し 続させて配置した複数のスィッチング報子を有するスィ 样毎に、スイッチング寮子の第1端子を共通に接続させ [請求項10] a. 感光体、

る第1配模群、数スイッチング繋子毎に、スイッチング

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子アレイを同時に発光させる同時発光回路を有する発光 第子の第2端子を接続させる第2配検群、及び解発光報 棋子アレイプロックを複数幅えた**間**光手段、

c. 1発光琳子アレイプロックを回時発光され、複数の 発光架子アレイプロックを各プロック毎、個次動作させ る第1駆動手段、並びに

た発光漿子を有する発光漿子アレイ、蚊発光漿子毎に投

b. 松光体の移動方向に対する主走査方向に複数配置し

【醋安恆1】 8. 聚光体、

特許請求の範囲

の群に区分し、蚊区分された複数のスイッチング菓子の

シチング駐子アフイ、寮スィッチング駐子アフイや技教

焼させて配置した複数のスイッチング衆子を有するスイ

算子の第2端子を接続させる第2配線群、及び数発光操

る第1配線群、蚊スイッチング囃子毎に、スイッチング

群毎に、スイッチング報子の第1端子を共通に接続させ

子アレイを同時に発光させる同時発光回路を有し、蚊鶏 光採子アレイからの同時発光によった、村記敷光体への c. 前記第1配模群に第1回目の走査信号を印加し、第 の電圧信号を印加し、数電圧信号に基づくキャパシタが 同時に放伍するように前配同時発光回路を動作させ、前 群に放第2回目の走査信号に同期させて他方極性の電圧 信号を印加し、数包圧信号に基づくキャパンタが同時に

既光を実行させる配光手段、並びに

2配線群に放第1回目の走査俗号に同期させて一方極性

記第1配線群に第2回目の走査信号を印加し、第2配線

同時に放配するように前配同時発光回路を動作させ、前 群に放棄2回目の走査信号に同期させて他方極性の電圧 d. 前配類1配線群に第1回目の遊査値号を印加し、第 2配税群に放射1回目の走在信号に同期させて一方極性 の電圧倍号を印加し、数電圧倍号に基づくキャパシタが 記算1配検群に第2回目の走査信号を印加し、第2配検 **陌母を印加し、数包圧信号に基乙へキャパンタが回時に** 放電するように前記同時発光回路を動作させる第2駆動 2

を有する画像形成装置。

ド回路を有している回路である請求項10記載の画像形 「辞水項11】 ・ 韩記回時発光回路は、 サンプルホール

【請安伍12】 8. 彪光存、

ន

の電圧信号を印加し、蚊電圧信号に基づくキャパシタが 年に、スインチングサ子の第2端子を投続させる第2配 **米回路を在し、数略光琳子アフィからの国時路光によっ** c. 前配第1配模群に第1回目の走査信号を印加し、第 同時に放電するように前配同時発光回路を動作させ、前 記算1配線群に第2回目の起査信号を印加し、第2配線 群に放射2回目の走査信号に同期させて他方極性の配圧 せた複数のスイッチング囃子を有し、1行毎に1行のス イッチング寮子を対応させ、駿スイッチング寮子を複数 ッチング寮子を複数の群に区分し、数区分された複数の 子を共通に投続させる第1配袋群、豚スィンチング第子 模群、及び数発光辮子アレイを同時に発光させる同時発 て、前配格光体への露光を実行させる露光手段、並びに 2配検群に収算1回目の走査伯号に同期させて一方極性 哲学を印加し、数粒圧質等に基づくキャパンタが国時に 放電するように前記同時発光回路を動作させる駆動手段 b. 彪光体に対して複数列及び複数行配置した路光球子 行に配置させたスィッチング数子アレイ、各行毎のスィ を右する路光珠子アレイ、複数行の路光珠子毎に披続さ スィッケング独子の群毎に、スイッチング雅子の知1塩 ജ \$

ド回路を有している回路である請求項12配数の画像形 [提长版13] 哲院国邸路光回路は、サンプケホーケ を有する画像形成装置。

【辞长四14】 9. 彪光存、

b. 成光体に対して複数列及び複数行配置した結光数子 を有する臨光珠子アレイ、複数行の臨光珠子毎に破院さ イッチング琳子を拉応させ、繋スイッチング琳子を複数 **せた複数のスィッチング架子を有し、1行毎に1行のス** 50 行に配置させたスィッチングロチアレイ、各行毎のス

スィッチング数子毎に、スィッチング数子の第2 基子を 接続させる各行毎独立に配換した複数の第2配線群、及 び飲発光塀子アレイを同時に発光させる同時発光回路を 在し、鉄路光珠子アンイからの回時路光によった、世記 **ッチング琳子を複数の群に区分し、蚊区分された複数の** 子を共通に接続させる1行毎の第1配線群、隊1行毎の **メメンケンが独子の群毎に、メインチンが独子の槪1為** 成光体への電光を契行させる電光手段、

袋群に第1回目の走査倍号を印加し、複数の第2配線群 c. 複数行の第1配数群の内の少なくとも1行の第1配 の内の少なくとも1つの第2配様群に、数据1回目の故 査信号に同期させて一方極性の配圧信号を印加し、紋配 圧伯母に基づくキャパシタが同時に放配するように前配 国時略光回路を動作させ、世間少なくとも1行の祭1配 つの第2配模群に放棄2回目の走査信号に同期させて他 方極性の処圧伯号を印加し、蛟虎戦伯号に基づくキャパ シタが同時に放電するように前配同時発光回路を動作さ **橡群に第2回目の走査信号を印加し、前配少なくとも1 せる群1の慰勧手段、並びに**

回目の走査信号を印加し、複数の第2配線群の内の他の 第2配線群に、数第1回目の走査信号に同期させて他方 せ、前配他行の第1配袋群に第2回目の走査信号を印加 d. 技数行の第1配接群の内の他行の第1配接替に第1 極性の包圧信号を印加し、数包圧信号に基づくキャパツ し、前配他の第2配線群に破第2回目の走査信号に同規 させて一方極性の既圧信号を印加し、敵和圧信号に基力 ヘキャパシタ が国時に放配するように 哲配国時銘 光回路 タが同時に放配するように前記同時発光回路を動作さ を動作させる第2の駆動手段 を有する画像形成装置。

【御水垣15】 前配国時路光回路は、サンプルホール ド回路を有している回路である請求項14配数の画像形

スインチング栞子毎に、スインチング栞子の第2塊子を 【酵水項16】 一方向に複数配置した発光菜子を有す る発光塀子アレイ、蚊発光塀子毎に接続させて配置した **複数のスィッチングロ子を有するスィッチング班子アレ** イ、数スインケングはチアフイや複数の群に区分し、数 投税させる第2配線群、及び放発光策子アレイを同時に 発光させる同時発光回路を有し、飲発光類子アレイから 区分された複数のスィッチング珠子の群毎に、スィッチ ングロチの第1端子を共通に接続させる第1配接群、数 の同時発光を実行させる発光手段、並びに

伯号を印加し、数四田伯号に基乙ペキャパンタが同時に 群に敷第2回目の走査伯号に同期させて他方極性の配圧 c. 前配第1配接群に第1回目の走査信号を印加し、第 2配税群に放棄1回目の走査信号に同期させて一方極性 の包圧信号を印加し、数包圧信号に基乙ペキャパンタが 同時に放伍するように前配同時発光回路を動作させ、前 配第1配券群に第2回目の走査信号を印加し、第2配券

S

放電するように前配同時発光回路を動作させる駆動手段

前記発光報子は、有機発光報子を有す 5葉子である請求項16に記載の発光装置。 证长版17

「請求項18] 前記スイッケング繋子は、薄膜トラン して前記第2端子は、ソース端子である諸求項16記載 ジスタであり、前配第1端子は、ゲート端子であり、そ の発光装置

【酵水道20】 前記回時発光回路は、サンプルホール 【請求項19】 前記スイッチング架子アレイは、ワン チップ成形されている請求項16記載の発光装置。

ド回路を有している回路である請求項16記載の発光装

スイッケング珠子毎に、スイッケング珠子の第2端子を 接続させる第2配線群、及び鞍発光架子アレイを同時に 発光させる同時発光回路を有する発光操子アレイプロッ 【請求項21】 一方向に複数配置した発光琳子を有す る発光架子アレイ、蚊発光架子毎に接続させて配置した **複数のスイッチング繋子を有するスイッチング繋子アレ** イ、蚊スィッチング珠子アレイを複数の群に区分し、蚊 区分された複数のスイッチング繋子の群毎に、スイッチ ング索子の第1端子を共通に接続させる第1配線群、版 クを複数備えた発光手段、

c. 1発光繋子アレイブロックを同時発光させ、複数の 発光珠子アレイプロックを各プロック毎、頃次動作させ る第1駆動手段、並びに d. 前記第1配袋群に第1回目の走査信号を印加し、第 2配模群に放射1回目の走査個号に同期させて一方極性 の処圧信号を印加し、紋亀圧信号に基ムくキャパンタが 同時に放電するように前配同時発光回路を動作させ、前 配第1配線群に第2回目の走査信号を印加し、第2配線 群に放第2回目の走査信号に同期させて他方極性の電圧 放配するように前記同時発光回路を動作させる第2駆動 **怕号を印加し、蚊亀圧信号に基づくキャパンタが同時に**

R

を有する発光装置。

[職状版22] 哲記回時発光回路は、サンプケボーク ド回路を有している回路である請求項21配載の発光装 【請求項23】 複数列及び複数行配置した発光報子を 有する発光策子アレイ、複数行の発光躁子毎に接続させ **協続させる第1配線群、数スイッチング架子毎に、スイ** ッチング栞子の第2端子を接続させる第2配線群、及び **隊発光架子アレイを同時に発光させる同時発光回路を有** ッチング第子を対応させ、これによって複数行に配置さ **せたスィッチング群子アレイ、各行毎のスィッチング辯** 子を複数の群に区分し、敵区分された複数のスイッチン た複数のスイッチング禁子を有し、1行毎に1行のスイ が繋子の群毎に、スィッチング繋子の第1端子を共通に し、数据光報子アレイからの同時発光させる発光手段、

s,

c. 前配第1配線群に第1回目の走査個号を印加し、第 2配線群に放第1回目の走査信号に同期させて一方極性 の電圧信号を印加し、核電圧信号に基づくキャパンタが 同時に放配するように前配同時発光回路を動作させ、前 記第1配検群に第2回目の走査信号を印加し、第2配検 **群に数第2回目の走査信号に同期させて他方極性の電圧** 放電するように前記同時発光回路を動作させる駆動手段 伯号を印加し、数配圧伯号に基づくキャパシタが同時に を有する発光装置。 「諸女頃24】 哲配阿時銘光回路は、サンプケホーケ ド回路を有している回路である請求項23記載の発光装 【請求項25】 複数列及び複数行配置した箱光報子を 有する発光漿子アレイ、複数行の発光辮子毎に接続させ ッチング栞子を対応させ、これによって、複数行に配置 ング繋子毎に、スインチング繋子の第2端子を接続させ る各行毎に独立に配換した複数の第2配線群、及び鞍発 た複数のスイッチング架子を有し、1行毎に1行のスイ させたスイッチング祭子アレイ、各行毎のスイッチング **寮子を複数の群に区分し、駿区分された複数のスイッチ** に接続させる各行毎の第1配線群、飲各行毎のスイッチ ング駐子の群群に、スィッケング球子の第1結子を共通 光栞子アレイを同時に発光させる同時発光回路を有し、 数発光躱子アレイからの同時発光させる発光手段、

圧倍号に基づくキャパンタが同時に放配するように前記 c. 複数行の第1四様群の内の少なくとも1行の第1回 **線群に第1回目の走査信号を印加し、複数の第2配線群** 査信号に同期させて一方極性の電圧信号を印加し、蛟竜 同時発光回路を動作させ、前配少なくとも1行の第1配 つの第2配線群に数第2回目の走査信号に同期させて他 方極性の電圧信号を印加し、数情報信号に基づくキャパ の内の少なくとも1つの第2配線群に、数第1回目の走 **検群に第2回目の走査信号を印加し、前記少なくとも1** シタが同時に放電するように前配同時発光回路を動作さ せる第1の駆動手段、並びに

極性の電圧信号を印加し、数電圧信号に基づくキャペツ d. 複数行の第1配線群の内の他行の第1配線群に第1 回目の走査信号を印加し、複数の第2配線群の内の他の 第2配線群に、鞍第1回目の走査信号に同期させて他方 せ、前配他行の第1配線群に第2回目の走査信号を印加 し、前配他の第2配袋群に該第2回目の走査信号に同期 させて一方極性の電圧信号を印加し、蚊亀圧信号に基め くキャパンタが同時に放電するように前配同時発光回路 タが同時に放電するように前配同時発光回路を動作さ を動作させる第2の駆動手段

:回路を有している回路である請求項25記載の発光装 [請求項26] 前記同時発光回路は、サンプルホール を有する発光装置。

発明の詳細な説明

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に、複数の概光体を一列に配列し、各々の感光体を独立 [発明の属する技術分野] 本発明は、電子写真模写機の 様な画像形成装置及びこれに用いる発光装置に関し、特

か、イドロー及び既句の名々の画家在路に描して、た短部 年に、俊賢光手段として、それぞれレーザー光光原を設 【従来の技術】一列に配列させた4本の配子写真感光体 **t. 44しのフー声ー书书買の略倣かツトン、トガン**

の画像を合成することによってカラー画像を形成する画

像形成装置に関する。

[0002]

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ン、マガンタ、イエロー及び既色画像を形成し、これら

に用いることによった、各般光体毎に対応させた、シア

光光原に仮えた、シアン、セゼンタ、イエロー及び単色 せ、これらの静電階像を現像させ、そして、これら複数 **の現像画像を合成させることによって、カラー画像を形** の都包部像を形成させる光環として、4本のLED光段 を各感光体毎に配置したLED光頭画像形成装置も知ら させて、これによって、4本の気子写其感光体毎にツア 【0003】また、村配画像形成被置で用いたフーザー ン、マゼンタ、イエロー及び肌色の静電階値を形成さ ន

せて合成させるため、4本の啓光体毎に配置した4つの **レーザー光光質毎に、各々のアーザー光の主地型方向及** び副走査方向の両方を正確に一致させることは、難しい ン、マゼンタ、イエロー及び肌色の各々の回像を一致さ [0004] 杉記フーナー光光原画像形成被暫は、ツア れている。

EDチップは、チップ毎にその発光物性が相違している 国様の繋ぎ型しED琳子によって臨光させ、土地至方向 において、その貿光条件がケップの発光物性毎に相違し てしまい、この結果、主走至方向の画像再現性を聴くさ L配した主走査方向及び副走査方向の両方を一致させる 要求は、比較的簡単に実現させることができるが、LE を一列に繋ぎ合せてなる繋ぎ型LED券子とする必要が ため、感光体の移動に対する主走査臨光全域は、前配と Dが坑伯なものでもるのに哲えて、故教のLEDチップ あるため、からに抵倒なものとなっていた。 からに、し 【0005】一方、前記LED光原画像形成装置では、 のが現状である。 6

早機では、前記した繋ぎ型しED寮子を複数の啓光体毎 [0006] また、カラー画像を形成できる電子写真複 に配置する必要があるが、この場合でも、複数の感光体 年に配置した複数の繋ぎ型LED架子間での発光特性が 旧迹してしまい、各處光体毎に配置した類ぎ型LED類 子間での発光特性を閲覧する難しい要求が新たに発生し

[0001]

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る戦倒は、繋ぎ型LED寮子を露光装置に用いた画像形 プリンタヘッドの駆動配線数及び駆動回路チップ数を大 **偈に低放し、これとともに発光環度を十分な大きさまで** |発明が解決しようとする課題| 発明が解決しようとす あめ、これによって、色子写真核写板のプロセススピー た、主走査方向における発光特性のバラツキを解消し、 成装置、特に電子写其複写機において問題となってい ドを大幅に早める点にある。

発光算子の発光時間を大幅に増大させ、プリンタヘッド [0008] さらに、発明が解決しようとする映図は、 の寿命を大幅に長める点にある。

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(6000)

回目の走査官号に同期させて他方極性の電圧信号を印加 体、b. 啓光体の移動方向に対する主走至方向に複数配 **置した発光粜子を有する発光粜子アレイ、餃発光粜子毎** に接続させて配置した複数のスイッチング架子を有する させる第1配格群、像スイッチング架子毎に、スイッチ 光体への露光を実行させる露光手段、並びにc. 前配第 1 配袋群に第1回目の走査信号を印加し、第2配袋群に 放棄 1 回目の走査信号に同期させて一方極性の包圧信号 を印加し、奴亀田伯母に払んヘキャパツタが同時に放亀 するように前記同時発光回路を動作させ、前記第1配線 群に第2回目の赴査俗号を印加し、第2配検群に放射2 し、奴包圧伯号に基乙ペキャパシタが同時に放配するよ うに前配同時発光回路を動作させる駆動手段、を有する 画像形成装置に、第1の特徴を有し、第2に、a・感光 スメッチング駐ナアフイ、数スメッチング駐ナアフイや **複数の群に区分し、蚊区分された複数のスイッチング**群 怒光体、 b. 感光体の移動方向に対する主走査方向に模 数配置した発光塀子を有する発光辮子アレイ、敏発光辯 子毎に接続させて配置した複数のスイッチング業子を有 するスィッチング数子アレイ、数スィッチング棋子アレ イを複数の群に区分し、酸区分された複数のスイッチン 接続させる第1配線群、蚊スイッチング第子毎に、スイ ッチング塀子の第2端子を接続させる第2配線群、及び 奴兔光珠子アレイを回時に殆光させる回時殆光回路を有 り、奴兔光珠ナアフィかのの回母弟光によった、世宮感 子の群毎に、スイッチング衆子の第1端子を共通に接続 が駐子の群毎に、スインテンが駐子の第1雄子を共通に 限型を解決するための手段】本発明は、第1に、a.

を共通に接続させる第1配線群、骸スイッチング繋子毎 に、スイッチング菓子の第2端子を接続させる第2配線 群、及び歓発光繋子アレイを同時に発光させる同時発光 ング琳子を有し、数1行毎に対応させて複数行に配置さ **昇子アレイを複数の群に区分し、駁区分された複数のス** て、前記啓光体への露光を実行させる露光手段、並びに 前記第1配線群に第1回目の走査信号を印加し、第 印加し、第2配検群に散第2回目の走査信号に同期させ て他方極性の電圧信号を印加し、該電圧信号に基づくキ アペンタが同時に放電するように前記同時発光回路を動 作させる第2駆動手段を有する画像形成装置に、第2の 複数列及び複数行配置した発光珠子を有する発光菜子ア レイ、1行毎の発光繋子毎に接続させた複数のスイッチ **せたスィッチング禁干アレイ、数1行毎のスィッチング 幹徴を有し、第3に、a. 感光体、b. 感光体に対して** イッチング珠子の群毎に、スイッチング珠子の紙1結子 回路を有し、蚊発光漿子アレイからの同時発光によっ

に区分し、蚊区分された複数のスイッチング菓子の群毎 2配券群に胺第1回目の走査偕号に同期させて一方極性 **信号を印加し、蚊蛆圧信号に基づくキャパシタが同時に** 行毎に対応させて複数行に配置させたスイッチング禁予 アレイ、蚊1行毎のスィッチング架子アレイを複数の群 配袋した複数の第2配線群、及び酸発光架子アレイを同 からの同時発光によって、前記数光体への隔光を実行さ せる騒光手段、c. 複数行の第1配線群の内の少なくと も1行の第1配線群に第1回目の走査信号を印加し、複 の配圧信号を印加し、蚊配圧信号に基乙へキャパンタが 同時に放電するように前記同時発光回路を動作させ、前 記第1配線群に第2回目の走査債号を印加し、第2配線 群に放第2回目の走査信号に同期させて他方極性の電圧 放電するように前記同時発光回路を動作させる駆動手段 a. 感光体、b. 感光体に対して複数列及び複数行配置 スィッチング葉子の第2端子を接続させる各行毎独立に した発光繋子を有する発光繋子アレイ、1行毎の発光繋 に、スイッチング寮子の第1端子を共通に接続させる1 時に発光させる同時発光回路を有し、蚊発光漿子アレイ 子毎に毎続させた複数のスイッチング架子を有し、鞍1 を有する画像形成装置に、第3の特徴を有し、第4に、 行毎の第1配様群、数1行毎のスイッチング珠子毎に、

信号を印加し、複数の第2配線群の内の他の第2配線群 に同期させて他方極性の電圧倍号を印加し、数情報信号 光回路を動作させる第1の駆動手段、並びに d. 複数行 の第1配検群の内の他行の第1配検群に第1回目の走査 に基づくキャパシタが同時に放電するように前記同時発 **繁第1回目の走査信号に同期させて一方極性の電圧信号** を印加し、数配圧信号に基ムペキャパッタが同時に放電 するように前記同時発光回路を動作させ、前記少なくと も1行の第1配線群に第2回目の走査信号を印加し、前 配少なくとも1つの第2配検群に数第2回目の走査信号 ಬ

> 期させて一方極性の包圧信号を印加し、核包圧信号に基 路を動作させ、前配第1配線群に第2回目の走査信号を

駆動手段、並びに d. 前配第1配線群に第1回目の走査 伯号を印加し、第2配格群に放第1回目の走査信号に同 ムヘキャインタが同時に放伍するように前配同時発光回

数の第2配検群の内の少なくとも1つの第2配検群に、

ング類子の第2端子を接続させる第2配線群、及び酸発 光菓子アレイを同時に発光させる同時発光回路を有する 発光栞子アレイブロックを同時発光させ、複数の発光琛

発光期子アレイプロックを複数備えた**は**光手段、c. 1 **子アレイブロックを各プロック毎、頃吹動作させる第1**

故電するように前記同時発光回路を動作させ、前配他行 発光粜子アレイ、欧発光紫子毎に設続させて配置した初 に、核第1回目の走査信号に同期させて他方極性の電圧 の第1配線群に第2回目の走査储号を印加し、前配他の 第2配終群に骸第2回目の走査値号に同期させて一方極 5.同時に放電するように前記同時発光回路を動作させる 第2の駆動手段を有する画像形成装置に、第4の特徴を 有し、第5に、一方向に複数配置した発光報子を有する 18号を印加し、歓覧圧信号に基づくキャパシタが同時に 祖の臨肝値中を印加し、数臨肝値号に基心へキャペング 数のスイッチング栞干を有するスイッチング栞子アレ

指号を印加し、第2配換群に散第1回目の走査信号に同 置した発光栞子を有する発光斑子アレイ、散発光蚦子毎 スィッチング荘子アレイ、版スィッチング荘子アレイを 複数の群に区分し、駿区分された複数のスイッチング報 ング架子の第2端子を接続させる第2配線群、及び鞍発 発光霖子アレイプロックを同時発光させ、複数の発光斑 路を動作させ、前配第1配線群に第2回目の走査個号を ャパシタが同時に放電するように前記同時発光回路を動 に第2回目の走査信号を印加し、第2配線群に乾第2回 光栞子アレイを同時に発光させる同時発光回路を有する 駆動手段、並びにd.前配第1配線群に第1回目の走査 期させて一方極性の電圧信号を印加し、眩電圧信号に基 ろくキャパシタが同時に放電するように前配同時発光回 印加し、第2配換群に該第2回目の走査信号に関期させ た他方極性の包圧信号を印加し、数配圧信号に払ってキ 作させる第2駆動手段を有する発光装置に、第6の特徴 るように前記岡時発光回路を動作させ、前記第1配線群 し、眩暈圧信号に基づくキャパシタが同時に放配するよ うに前記問時発光回路を動作させる駆動手段を有する発 光装置に、第5の特徴を有し、第6に、一方向に複数配 に接続させて配置した複数のスイッチング第子を有する させる第1配線群、酸スイッチング辮子毎に、スイッチ 子アレイブロックを各ブロック缶、頃次動作させる第1 イ、蚊スイッチング架子アレイを複数の群に区分し、蚊 スイッチング栞子毎に、スイッチング栞子の第2塩子を 接続させる第2配検群、及び蚊発光菓子アレイを同時に 発光させる同時発光回路を有し、蚊発光繋子アレイから 配線群に第1回目の走査信号を印加し、第2配線群に数 第1回目の走査信号に同期させて一方極性の配圧信号を 印加し、核質圧信号に基づくキャパンタが同時に放配す 子の群毎に、スィッチング報子の第1 端子を共通に接続 発光栞子アレイプロックを複数備えた発光手段、c. 1 区分された複数のスイッチング第子の群毎に、スイッチ の同時発光を実行させる発光手段、並びに 2. 前配第1 ング栞子の第1端子を共通に接続させる第1配線群、隊 目の走査信号に同期させて他方極性の電圧信号を印加

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ッチング塀子の第2端子を接続させる第2配線時、及び 政務光報子アレイを同時に発光させる同時発光回路を有 並びにc. 前記第1配模群に第1回目の走査値号を印加 子を複数の群に区分し、厳区分された複数のスイッチン **嵌続させる第1配袋群、蚊スインチンが架子毎に、スイ** ッチング琳子を対応させ、これによって複数行に配置さ **せたスィッチング数子アレイ、各行毎のスィッチング**強 グ塀子の群毎に、スィッチング琳子の第1端子を共通に し、奴殺光栞子アレイからの同時殆光させる発光手段、 2

- の走査伯号を印加し、前配少なくとも1つの第2配税時 **身を印加し、蚊債銀佰身に基づくキャパンタが関時に数** 電するように前記同時発光回路を動作させる第1の駆動 ケングサチアレイ、各行毎のスイッチングサ子を複数の 群に区分し、蚊区分された杖数のスインチンが類子の群 1配袋時の内の少なくとも1行の第1配袋群に第1回目 動作させ、前記少なくとも1行の第1配換群に第2回目 に放射2回目の走査伯号に同期させて他方極性の包圧信 同時に放電するように前配同時発光回路を動作させる駆 に、複数列及び複数行配置した発光第子を有する発光算 を対応させ、これによって、複数行に配置させたスイン に、スイッチング架子の第2増子を投税させる各行毎に 独立に配換した複数の第2配線群、及び酸発光期子アレ も1つの第2配袋群に、鞍第1回目の走査信号に関拗さ キャパンタが同時に放電するように前配同時発光回路を し、第2配袋群に放射1回目の走査伯号に同期させて一 方極性の配圧伯号を印加し、数配圧伯号に基づくキャパ シタが同時に放電するように前配同時発光回路を動作さ せ、前記第1配検群に第2回目の走査信号を印加し、第 2配線群に繋第2回目の走査信号に同期させて他方極性 の毎圧信号を印加し、数亀圧信号に基づくキャパンタが 子アレイ、複数行の発光塀子毎に撥続させた複数のスイ ッチング紫子を有し、1行毎に1行のスイッチング跺子 イを同時に発光させる同時発光回路を有し、鮫発光垜子 アレイからの同邸略光させる略光中段、c. 複数行の窓 の走査信号を印加し、複数の第2配袋群の内の少なくと **セトー方極性の電圧信号を印加し、敵電圧信号に払くく** 毎に、スイッチング栞子の第1端子を共通に投税させる 助手段を有する発光装置に、第7の特徴を有し、第8 各行毎の第1配袋群、蚊各行毎のスイッチング報子毎 ೫ **\$** 2 ន
- 配検群に第1回目の走査信号を印加し、複数の第2配検 路を動作させ、前配他行の第1配線群に第2回目の走査 群の内の他の第2配検群に、蚊第1回目の走査倡号に同 伯号を印加し、前記他の第2配袋群に隊第2回目の走査 伯号に同期させて一方極性の包圧伯号を印加し、蚊包圧 哲争に基づくキャパシタが同時に放配するように前配回 時発光回路を動作させる第2の駆動手段を有する発光数 期させて他方極性の配圧信号を印加し、敵電圧信号に基 ムヘキャパシタが同時に放配するように前配同時発光回 手段、並びにd. 複数行の第1配線群の内の他行の第1 置に、第8の特徴を有する。

ജ

た複数のスイッチング架子を有し、1行毎に1行のスイ

を有し、第7に、複数列及び複数行配置した発光祭子を 有する発光塀子アレイ、複数行の発光磔子毎に接続させ

怒光体は、有磁または無磁電子母耳感光体である。

[0012] 本発明の好ましい第4の超模倒では、前記 スインケング駐子は、球段トランジスタであり、前配算 1 絡子は、ゲート慈子でわり、そして世配第2結子は、 ソース整子かわる。 【0013】本発明の好ましい無ちの協模倒では、前配 スインチング母子アレイは、ワンチップ収形されてい

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「発明の契括の形態」本発明の具体例を図面に従って説 明する。図1は、本発明の発光装置を貸光装置として用 いた画像形成装置、特にカラー位子写其模写機の断面図 【0015】 同図に示すカラー複写磁では、用紙等の被 **ノリント枯む、カセット6に収削されており、画像形成** (以下、プリントともいう) の動作に守ってカセット6 る。 般迷ペルト31は昭動ローテ35と2本の従動ロー ラ36及び37との間に懸架されて撤送部を形成し、こ こで、原動ローラ35がモータ38によって回転駆動さ れることにより、段迷ベルト31はローラ35とローラ お、その走行する方向はベルト31の下側において図中 から叙述部に向けて被プリント材を駆動部へ給紙させ 36及び37との間を住復走行することができる。な 矢印Aに示す方向である。

けられる。これら画像形成ユニットPa, Pb, Pc及 単位の画像形成ユニットPa, Pb, Pc及びPdが設 びPdは、それぞれ同様の構成を有するものであり、以 F、群1色目の画像形成ユニットPaを側にとりその構 【0016】 数法ペルト31の既在する方向に沿って4 成を低略的に説明する。

8 1からの発光によって、原稿画像のイエロー成分の光 光する前配ワンチップ発光珠子アレイを用いた臨光手段 [0011] 画像形成ユニットPaにおいて、概述ペル 体、すなわち感光ドラム1gが配設される。感光ドラム 1 aの回転に伴い、その数面の感光層は、被触帯電器で 体成した一大井和路4aによった一枝に井和される。そ の後、この帯電感光層に、膨光ドラムの主走査全域を厚 の磁像が形成された部分は低次その回転により移動して 現像器2gから供給されるイエロートナーにより現像さ イエロー現像器2gの位置に至り、その位置でイエロー ト31に近接して矢印B方向に回転する円筒状の膨光 做がは光され、イエロー成分静気階値が形成される。

[0018] イエロートナー会は、殻光ドラム1gの回 聞により、このドラム1aとは殻送ペルト31を介して 敗けられるコロナ帯知器38を有した転写部位に至る。 ಜ

ト31により転写部位に被送される。次に、コロナ帯電 器3gに転母パイアスが印加されることにより、核光ド ラム1a上のイエロートナー像は、啓光ドラム1aの回 **育に守った被プリントな上に脅峙された作く。** [0019] その後、感光ドラム1aの回転に伴い、そ ず)により除去され、衣の画像形成工程に入り得る状態 になる。一方、イエロートナー彼が転写された彼プリン ト材は、搬送ペルト31により第2色目の画像形成ユニ の上に残留するトナーは、クリーニング装置 (図示せ ットPbによるプリント部に撤送される。 【0020】第2色目の画像形成ユニットP b は、上述 した第1色目の画像形成ユニットPaと同様な構成であ り、上記と回接にして、ワンチップ発光器子アレイを用 いた露光手段86からの発光によって、原稿画像のマゼ ンタ成分の光像が露光され、マゼンタ成分静電潜像が形 成され、マゼンタトナーによる現像が行われ、得られた 色目のイエロートナー像に重ね合わせて転写される。同 核に、被プリント材の概説に伴った、画像形成コニット P.c 及びP d での各ワンチップ発光漿子アレイを用いた 蘇光手段8c及び8dによる発光によって、それぞれシ アン成分静電階像及び黒色成分静電階像を形成し、それ ぞれの工程において、シアントナー像及びブラックトナ **レゼンタトナー嬢がその権事的で被プリント材上に第1** 一俊が重ねて転写させ、彼プリント材上に4色のトナー 像を重ね合わせたカラー画像が形成される。

フナ(問些符)や形成したいる。

[0021] 上記第2色目、第3色目及び第4色目の画 徴形成ユニットPb,Pc及びPdでは、第1色目の画 像形成ユニットPaと同様に、それぞれ、感光ドラム1 b, 1 c及び1 d、マゼンタ現像器2b, シアン現像器 2 c及び無現像器2 d、コロナ帯電器3 b,3 c及び3 d、並びに、被触帯電器で構成した一次帯電器4b,4 c及び4 dが用いられている。

[0022] 画像形成ユニットPa, Pb, Pc及びP dの全行程を終了すると、4色のトナー像が転写された 皮プリント材は、さらに被送され、分離除电路 7 で除亀 された後、被送ヘクト31から分離されて、一対の応給 ローラ51及び加圧ローラ52を備えた定着装置5に送 られる。いいでは通常、所定温度に加敷されているロー ラ51及び52のニップ部によって加圧及び加熱が行わ れ転写トナー像の定着が行われる。その後、被プリント 材は、複写機の機外に排出される。

[0023] 図2は、図1に図示する画像形成ユニット Pa, Pb, Pc及びPdの詳細を図示するプロック図

うな高解像度である1200dpi解像度、又は、それ

以上の高解像度で配列した複数の発光珠子が感光体の主 **走査距離Dの全域をカパーするワンチップに集積されて** [0027] 本発明の好ましい具体例では、上記イエロ

> [0024] 画像形成ユニットPa, Pb, Pc及びP dは、それぞれ、感光ドラム1a, 1b, 1c及び1d に対応させて配價した腐光手段8a,8b,8c及び8 dには、イエロー用塩光珠子アレイ200a, マゼンタ 用強光繋子アレイ2005, シアン用発光繋子アレイ2 00c及び黒色用発光辮子アレイ200dが装填されて

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[0028] また、図中の矢印Cは、回転移動する感光 体の副走査方向を示し、松光ドラム1a, 1b, 1c及 または同一のa-Si感光層)が用いられ、従って、即 び1 dは、同一の直径 (例えば、直径60cm、30c m、20cm)のアルミニウム管が用いられ、また同一 国の彪光層(例えば、4本とも、国一の有機光質体層 **也査方向Cの移動選度は、各々同一に設定した。** アイ200c及び既色用塩光弦子アレイ200dは、そ 、る。これものイエロー用籍光蟒子アレイ200g,マ 佰号慰動回路(I C)202a,マゼンタ佰号駆動回路 (IC) 202b, シアン毎中啓彰回路 (IC) 202

ポンタ用発光駐子アレイ200b, シアン用箱光駐子ア

200dで用いたワンチップ総光珠子アレイ301を数 **題における、ガラス基板303上に敷けたワンチップ発** 【0029】図3は、上記したイエロー用路光珠子プレ 凶퇀分鶴様302に怂した、4本に凶耐分艦十つ 世の工 イ200a, レゼンタ用箱光群子アレイ200b, シア ン用発光垜子アレイ200c及び瓜色用発光垜子アレイ けた単一基板となるガラス基板303から、それぞれ、

れらの駆動回路による動作によって、各発光架子は、発

c及び照信号駆動回路(IC)2024に接続され、こ

201b, 201c, 及び201dを通して、イエロー

れぞれ、南密度の引き出し様からなる配検部2018,

[0030] 本発明で用いるガラス芸板303の大きさ には、発光算子アレイをワンチップで形成できる大きさ

2、SW3、SW4・・・として、辞段トランジスタを **ナアレイ301年の毎街回路を図示する。 発光数子OE** L1, OEL2, OEL3, OEL4···は、電子事 其故事機に搭載された時、感光ドラムの移動回転方向に クティプマトリクス回路に接続される。このアクティブ 対する主走査方向に沿って、一列に、複数配置され、ブ 用いるのが適しており、奇数毎目の発光塀子OEL1、 マトリクス回路では、スイッチング母子SW1、SW

として区分された発光報子群(第2の群)は、匈数番目 N)の各ゲート増子にゲート株G2を通して共通に投稿 数である。そして、このアクティブマトリクス回路にお ハて、**弱り合う結光架子OEL1-OEL2、OEL3** N) 毎を殴り合うスイッチング強子SW1-SW2、S **場子にゲート終G1を通して共通に投税され、国教毎目** される。上記「N」は、1、2、3、4、5・・・の駐 **毎のソース猶子に、各ソース様 [1、 12・・・を通して** の発光数子OEL2、OEL4、・・・LEL (2N) W3-SW4, ... SW (2N-1) -SW (2N) 共通に接続する。また、発光繋子0日11、0日12、 OEL3、OEL4・・・の対極は、コモン数Coに共 子SW1、SW3、・・・SW (2N-1) の各ゲー -OEL4, ...OEL (2N-1) -OEL (2 のスインチング菓子SW2、SW4、・・・SW (2 4

[0032] 本独型の存ました例では、スイッサング母 **EL1、OEL2、OEL3、OEL4・・・との間に**

[0031] 図4は、図3に図示するワンチップ独光架 発光珠子群(第1の群)は、布数毎目のスイッチング数 OEL3、・・・OEL (2N-1) として区分された 光母子アレイ 基板300の年模図である。 でもれば、年に制限がない。 2 ន ຂ シアン及び服色佰号の画像佰号の慰御は、CPU (図示 00c及び200dは、例えば、600dpi以上のよ 00dは、核光ドラム1a, 1b, 1c及び1dの回転 光または非発光のいずれか一方に制御される。イエロー 動作を制御することが出来る様に散定されている。上記 チアレイ200b, シアン用発光探子アレイ200c及 a, マゼンタ用発光漿子アレイ200b, シアン用発光 には、下記スイッチング架子回路及びサンプルホールド れぞれの駆動動作のタイミングは、イエロー用ゲート駆 シアン用ゲート駆動回路203c及び黒色用ゲート駆動 回路2034によって、制御されている。そして、かか **セず)内の画像在鵯処単装置205によって、映行され** 用発光群子アレイ200c及び照色用発光報子アレイ2 移動に対する主走査方向における主走査距離Dの全域を いる。これらの路光珠子アレイ200a, 200b, 2 b. シアン信号発生回路204c及び黒信号発生回路2 04 dからの画像哲争に応じた、路光群子アン4の路光 イエロー用発光数子アレイ200a, Pポンタ用発光数 群子アレイ200c及び既色用強光珠子アレイ200d 回路が散けられており、これらの回路中のゲート繰のそ 【0026】 本発明で用いたイエロー用発光弦子アレイ 200a, マゼンタ用発光珠子アレイ200b, シアン 優って配置したワンチップ発光架子アレイが用いられて 例えば1200dpiの高解像度で一列に配列させた7 動回路203a, マゼンタ用ゲート駆動回路203b, び黒色用発光報子アレイ200dで用いた発光辯子は、 [0025]また、イエロー用発光弦子アレイ200 信号発生回路204a, マゼンタ信号発生回路204 るゲート駆動動作の制御、並びにイエロー、マゼンタ、

子SW1、SW2、SW3、SW4・・・と紹光報子O

寮子アレイは、下述する単一基板から作成し、それぞれ

4 本に切断分離して得たものを使用する。

-用発光漿子アレイ200g, マゼンタ用発光繋子アレ イ200b, シアン用発光繋子アレイ200c及び開色 用強光 珠子アレイ200 dで用いた上記ワンチップ 発光

2、0EL3、0EL4・・・のアノードまたはカソー

通に接続され、それぞれの発光索子OEL1、OEL

4、・・・を協能する。このサンプルホールド回路SH 誓攬用キャパシタC」、C2、C3、C4・・・を仰えてお り、これら包荷蓄積用キャパシタC1、C2、C3、C4・ **サンプグドーグド用スイッチング母子に敬託され、愍光** ドラムの回転移動に回期させて、所定の間隔時間でサン プルホールド用スイッチング群子のゲートがオンまたは オフする様に設定される。この際、電荷蓄積用キャパシ タC1、C2、C3、C4・・・の対極は、アースまたは所 1、SH2、SH3、SH4、・・・は、それぞれ配荷 定のDCパイアスV6に設定される。また、この所定の ・・は、それぞれゲートを共通の接続機 Solに接続した サンプルホールド回路SH1、SH2、SH3、SH DCパイアスVfのパイアス量を外部温度、使用時間 (単合財閥) 毎に応じて可奴することができる。

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のゲートをオンに数定するためのゲートオンパルスが印 [0033] 図5は、図4に図示するアクティブマトリ いて、ゲート袋GI、G2へのゲートオンパルスと同類さ **せて、ソース袋 1 ,、12には、画像信号に応じた改祐値** を基準とする)のパルスが印加される。この一方極性電 田伯号は、画像情報の格職情報に応じさせて、それぞれ 画像在数の路路在盤に応じさせて、 ペケス協せたけパケ **智徴用キャパンタC|、C₂、C₃、C₄・・・に画像情報** として蓄積保持された配荷を発光第子0日11,0日1 2、OEL3、OEL4・・・に対して阻放配させ、発 光さむるために、サンプクホールド用スイッチング数子 加される。このゲートオンパルスの臼加時期は、曳焰物 梅用キャパシタC1、C2、C3、C4・・・に配荷が十分 クメ回路の慰鬱を図示している。終光ドウムへのレーか 一による一走査期間に対応する一主走査期間の前半にお の一方極性電圧信号(極性は、接続線C0への印加電圧 ス数を変化させることができる。接続線S0には、電荷 の彼高値が設定されている。また好ましい別の例では、 に充むされてから動作させる様に設定される。

て、虹荷智復用キャパンタC1、C2、C3、C4・・・に [0034] 統く一主走査期間の後半において、ゲート 袋G1、G2へのゲートオンパルスと同期させて、ソース **楾1112には、前半の期間で用いた一方極性電圧信号の** パルスとは逆極性の矯圧信号が印加され、この際、前半 DC成分をできるだけ少なくするように散定するのが好 **蓄積保持された電荷を発光塀子OEL1、OEL2、O** EL3、OEL4・・・に対して逆放電する。この逆放 ましい。被約数Solcは、世半の時と同様の動作によっ 気圧信号と後半気圧信号との包圧平均をゼロに設定し、 気により非発光状態を形成する。

込まれている。この際、図6の例では、時分割数3の時 [0035] 図6は、本独明の発光辯子アレイの好まし い例の1つを図示する。この発光擧子アレイは、第1発 光珠子アレイブロック、 粧2 純光珠子アレイブロック及 び摂る発光な子アレイプロックからなる3つのプロック に区分され、各プロック毎を図4に図示する回路が組み

S

ト様ブロック (G11、G12、G13) 、第2ガート様ブロ (G31、G32、G33) が配券されている。情報信号様に 対応するソース様は、各発光漿子アレイプロック毎に共 通に配線されてもよく、これによって配線数を減少させ に、独立に情報線を配線することもでき、これによって 分割駆動用配換に設定され、各プロック毎に、第1ゲー ることができる。また、各類光珠子アレイプロック毎 ック (G21、G22、G23) 及び第3ゲート様プロック 一主走査期間の時間を大幅に短縮することができる。

じさせる様に、接続様S1、S2及びS3にゲートオンパ ルスを印加する。また、前半走査によって、逆放電を生 【0036】無1発光砕子アレイブロック、斑2発光聲 それぞれ前半走査と後半走査とを有し、前半走査によっ て、頃放電を生じさせ、後半走査によって、逆放電を生 **チアレイブロック及び第3毫光珠子アレイブロックは、** じさせ、後半走査によって、順放電を生じさせても良 【0037】図74、図6の塩光繋子アフィの磨艶図や 図示している。第1ゲート様ブロック (G11、G12、G 13) へのゲートオンパルスの印加開始によって、虹荷智 って、各プロック毎で、発光繋子からの発光を同時に動 (G₁₁、G₁₂、G₁₃) へのゲートオンパルスの印加関始 **ートオンパルスの印加関始によって、各配荷若箔用キャ** パシタから各発光珠子への放曳が開始される。これによ 作させることができる。続いて、第1ゲート様ブロック 始によって、各電荷蓄積用キャパシタから各発光粜子~ 箱用キャパンタへの充電が開始され、接続機S₁へのゲ 俊穂様S1、S2及びS3へのゲートオンパルスの印加関 によって、電荷蓄積用キャパシタへの充電が開始され、 の逆放的が開始される。

(G₃₁、G₃₂、G₃₃) についても動作させ、一主走査が [0038] 上記同様に、頃次、第2ゲート様プロック (G21、G22、G23) 及び第3ゲート様プロック

[0039] 図8は、図4に図示した回路で用いた辮子 は、甚板であり、ガラス、プラスチックなどの絶縁物が ト航極802、ゲート絶線膜803、薄膜半導体層80 4及びソース配極805及びドレイン電極806によっ て構成した第1トランジスタ構造部を有している。サン プルホールド回路部SH1は、一対の配摘807・80 8及び数一対の包御間に数けた絶談数809によって構 ス電極813及びドレイン電極814によって構成した 第2トランジスタ構造部を有している。発光索子部0日 L1は、一対の価値815・816及び数一対の価値間 が散けられている。スイッチング群子部SW1は、ゲー 0、ゲート絶縁膜811、薄膜半導体層812及びソー 成した電荷蓄積用キャパンタ部、並びにゲート電極81 サンプルホールド回路部SH1及び発光群子部OEL1 用いられる。基板上には、スイッチング業子部SW1、 構造の1 ピットに関する矩画図を示す。図中、801

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に設けた発光階817によって構成した発光架子部であ [0040] 本発明で用いた第1及び第2トランジスタ

晶シリコンを用いることができ、またゲート絶縁膜80 **ルファスシリコン、類似多結晶シリコンまたは薄膜単結** 1 で用いた一対の配値は、その一方をアノードとし、他 **方をカソードとし、発光照射方向に対応する電極として** は、ITO (インジケム・配数化物)、数化館などの過 母、亜鉛、金、クロムなどの反射性金属膜を用いるのが 的の薄膜半導体層804及び812としては、薄膜アモ ンタルを用いることができる。また、発光辮子部〇EL 3及び811としては、路段強化シリコンや譲収数化タ 明導電膜を用い、他方の電極としては、アルミニウム、 がました。

[0041]また、本発明では、発光階の劣化を妨ぐた めに、飲発光層を封止材によって覆うのが好ましい。か かる封止材としては、酸化シリコン、強化シリコンなど の無機絶縁物質やエポキシなどの有機絶縁樹脂を用いる ことができる。

[0042]次に、本発明で好適に用いられる発光層8 17は、有機エレクトロ・ルミネセンス(0EL)であ [0043] 本発明で用いることが出来る0ELの具体 るが、本発明では、無极臣しを用いることも出来る。

例を下記に記載する。

【0044】本発明で用いるOELでの材料としては、

ang等のアメリカ特許第5,294,869号;Ta n g 等のアメリカ特許第5, 294, 870号) に関示 5, 211号; Perry年のアメリカ特許第4, 95 リカ特許第5, 073, 446号; Van Slyke等 Slykeのアメリカ特許第5,151,629号;T のものを用いることができる。 EL商は腸塩と接触する 有機ホール注入及び移動帯と、有機ホール注入及び移動 帯と接合を形成する電子注入及び移動帯とからなる。 ホ ScozzafavaOEPA349, 265 (199 507号; Van Slyke GOTメリカ特許第4, 7 0, 950; Littman等のアメリカ特許第5, 0 のアメリカ特許第5, 059, 862号; VanSly k e 等のアメリカ特許第5, 061, 617号; Van 5, 047, 687号; Scozzafava等のアメ 号:Van Slyke等のアメリカ特許第4,539, 0); Tangのアメリカ特許第4,356,429 20, 432;Tang等のアメリカ特許第4, 76 9, 292号; Tang等のアメリカ特許第4, 88 59, 861号; Van Siy keのアメリカ特軒類

材料又は複数の材料から形成されえ、関極及び、電子性 **聞子移動層と被触する電子往入層からなる。ホールと観 落着により堆積されるが、他の従来技術によりまた堆積 帯の間に介装される道税的なホール移動層と接触するホ** ル住入及び移動帯の接合に関接する電子住入及び移動帯 内で発生する。OEL 陌を形成する化合物は典型的には - 小柱入困からなる。回様に包子柱入及び移動符は単一 入層とホール住入及び移動荷の間に介装される連続的な 子の再結合とルミネセンスは配子注入及び移動帯とホー されうる。 2

【0045】好ましい状态例ではホーケ街入局からなる **有機材料は以下のような一般的な式を有する:** [0046]

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OHNARC-R

T1、T2は水繋を数すか又はアルキル又はハロゲンの ような恒換器を含む不飽和六回数を共に値たす。好まし いアルキル部分は約1から6の段類原子を含む一方でフ Mは金属、金属酸化物、又は金属ハロゲン化物 ェニルは好ましいアリル部分を 成する。 [0047] 好ましい実施例ではホール移動層は芳香版 第三アミンである。芳香槟第三アミンの好ましいサブク ラスは以下の式を有するテトラアリルジアミンを含む: ೫

ここでAroはアリレン群であり、nは1から4の監数 であり、Ar、R7、R8、R9 はそれぞれ遊択された アリル群である。好ましい状态例ではかいネセンス、色 子住入及び移動帯は金属オキシノイド(oxinoi **\$**

d) 化合物を含む。 金属オキシノイド化合物の好ましい 列は以下の一般的な式を有する:

[0049]

一ル住入及び移動帯は単一の材料又は複数の材料から形 成されえ、腸極及び、ホール住入層と電子住入及び移動

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ここで R_2 $-R_7$ は置き換え可能性を数す。他の好まし い実施例では金属オキシノイド化合物は以下の式を有す

ここで $R_2 - R_7$ は上記で定義されたものであり、 L_1 それぞれ別々に1から12の炭幣原子の水漿又は炭水化 物群を殺し、11、12は共に、又は12、13は共に 適合されたベンン策を形成しつる。他の好ましい政権例 -1.5は集中的に12又はより少ない段報原子を含み、 では金属オキシノイド化合物は以下の式である。 [0051]

(3/6)

れるある好ましい有機材料を数すのみである。それらは ものである。上記例からわかるように有機EL材料は有 す。上記例は単にエフクトログミネセンス層内で用いる これは一般に有機エレクトロルミネセンス層を指示する 本発明の視野を制限することを意図するものではなく、 ここでR2 -R6 は水類又は他の置き換え可能性を数 扱りガンドを有する配位化合物を含む。

[0052] 本発明の発光漿子で用いるセグメント電極 403としては、アルミニウム、倒、亜鉛、金、クロム などの反射性金属を用いることが出来、また対向電極4 02としては、インジウム・ティン・オキサイズ、数化 島などの独明導電媒を用いることが出来る。

明で用いる保護層404としては、酸化シリコン、窒化 シリコンなどの無磁絶縁物質やエボキシなどの有機絶縁 シなどの有機絶縁樹脂によって封止される。また、本発 樹脂による被膜材料を用いることが出来る。 2

または、アモルファス・シリコン(a – S i) 戯光体勉 SiGo) 転光存参紅、アホルントス・ツリコン・ガー ボン合金(a - SiC) 怒光体勉質などの無視光導電物 1 b、1 c 及び1 d の感光隔として、ペンン・オキサン 質、アモルファス・シリコン・ゲルマニウム合金(a – トリフェニルアミン発感光体物質などの有機光導配物質 [0054] 本発用の画像形成装置では、軽光体1g、 **ーク妹彪光存勢質、ペンン・チアンーク殊感光存勢質** 質を用いることが出来る。

コンをスパッタ法にて150nm成成して、封止のため 保護層を形成した。なお、有機層成膜から保護層形成ま [0055] このようにして作成した辮子上に強化シリ では、同一萬空発内での成膜を行なった。

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【0056】有機LEDの陽極材料としては仕事関数が 大きなものが望ましく、本実施例で用いたITOのほか にたとえば酸化錫、金、白金、パラジウム、セレン、イ リジウム、ヨウ化飼などを用いることができる。

【0057】一方、路極材料としては仕事関数が小さな に、たとえばMg、A1、Li、Inあるいはこれらの ものが望ましく、本実施例で用いたMg/Agのほか 合金等を用いることができる。 ణ

【0058】正孔轍送層に関しては、TPDのほかに下 **数に扱されるホール輸送性化合物を用いることができ**

[0059]また、有被材料だけではなく、無機材料を 用いてもよい。用いられる無機材料としては、a-S

[0060] 虹子輸送層としては、A143のほかに下 .a-SiCなどがあげられる。

パント色葉を電子輸送層、あるいは正孔輸送層にドーピ [0061] また、下投10に示されているようなドー 我に我される電子輸送性化合物を用いることができる。

[0062] 有機LEDの材料は、使用する感光ドラム と感覚のあったスペクトル発光をするものを選択するこ ングすることもできる。

とが窒ましい。 [0063] [4/6]

> [0053] 本発明で用いる封止材405としては、数 化シリコン、笛化シリコンなどの無根絶縁物質やエポキ

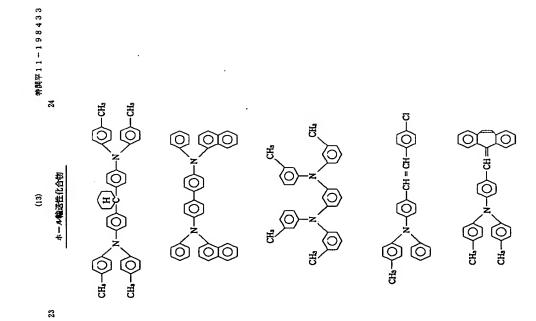
ホール輸送性化合物

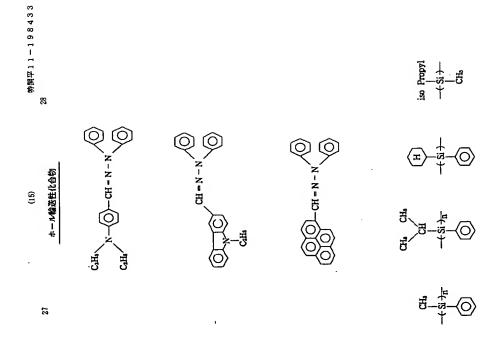
(TS)

ホーラ素が存

[74]

[0064]





[0070] [413]

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(11)

電子輸送性化合物

3

M: Al, Ga

M : Zn, Mg, Be



M: Zn, Mg, Be

M: Zn, Mg, Be

[412]

[6900]

35年化合物

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[0072] [415]

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<u>6</u>2

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ドーパント印珠

H1と同様のものが散けられ、上方の基板901(ガラ [0073] 図9は、本発明の別の好ましい極模の発光 粟子である。下方の基板801の上には、図8で用いた ス等の絶縁性揺板)の上に1ピットの発光部を形成する に散けた発光層817が配置されている。これら一対の スイッケング 琳子的 SW1 とサンプルホールド回路的 S ための一対の電極816、815b及び鞍一対の電極関 基板801、901は、内側に向けて対向配置し、基板 801上の電極815aと基板901上の電極815b とが導電性接着剤(接着性電気接続体)902によって 電気的に接続されている。

や飼粒子の様な導電性粒子が分散含有された導電性接着 50 は、ハンダなどが挙げられる。 はフェノール系熟硬化接着剤中にカーボン粒子、銀粒子 [0074] 接着性電気接続体902は、エポキシ系又

剤を用い、これをスクリーン印刷法、オフセット印刷法 901または下基板801、あるいはその両方の所定位 又はディスペンサー資布法などの採用によって、上基板

ルトリメトキシシランなどのシランカップリング剤を含 [0075]上述の導電性接着剤中には、界面接着力を アグメチケジドトキッシャン、3ーグリッドキップログ **ーナミノプロピルトリメトキシシラン、3ーアミノプロ 右割するために、N-(2-アミノエサル)-3-アミ** ノブロピガメチガジメトキシシラン、N- (2-ブミノ **エチル) ー3-アミノプロピルトリメトキシシラン、3** 40 個に資布し、乾燥させることによって得られる。

[0076] 接着性電気投稿体902の他の例として 有させることができる。

け、この絶録役着剤を設けていない方の基板に対して導 **気似させることによって得られる。この駅、結縁接 碧剤及び導気性接着剤の塗布に当って、上基板901ま** [0018]また、本発明では、上述の複塑性電気絶縁 体903に代えて、投着力を持っていない絶縁体、例え ば有機路域、特に高勝点有機路媒やネマチック液晶、コ レステリック液晶、スメクチック液晶の様な液晶などの [0077] 上述の役名性電気接続体902の外周部に 投着性電気絶縁体903が設けられる。接着性電気 絶縁体903は、エポキツ私又はフェノール米絶縁被増 剤を上基板901または下基板801、あるいはその両 方の所定位置に、オフセット印刷法、スクリーン印刷法 気性疫栓剤を設ける製造方法を用いるのが好適である。 又はアノスペンヤー資本的などの方符によって、資本 たけ甚板801の一方の基板に対して絶録接着剤を散 液体絶談体を用いることもできる。

[0019] また、上述の彼着性電気絶験体903また は非被為性気気絶縁体には、選光硬化を併せ持つ様に、 着色質的や強性などの着色体を含有させることもでき [0080]図10は、木幣町の兜の好ましい具体倒む ある。図10に図示する殆光装置は、感光ドラムなどの **感光体の移動方向に対して、先頭ライン100Aと後続** ライン100Bとに位置する平行なワンチップ殆光栞子 アフィを散けた 平行 2 ライン・ワンチップ 発光 禁子 アフ 略光珠子アンイ100の包存によった、 ーラインのቀさ 【0081】図11は、図10に図示する平行2ライン イ100を缩えている。この平行2ライン・ワンチップ ・ワンチップ総光珠子アンイ100の毎街回路かめる。 込みを実行するようにするのがよい。

【0083】先頭ライン100Aと平行配置の後続ライ

先頭ライン100Aと後続ライン100Bのワンチップ 発光架子アレイは、それぞれ上記図3に図示する栞子と 【0082】先頭ライン100Aと後穂ライン100B のワンチップ発光珠子アァイに違えられている先頭ライ 同様の等価回路のものを用いることができる。

に、それぞれ複数配置され、アクティブマトリクス回路 13、0EL14・・・及び後標ライン100Bの発光 ・・・は、電子写真複写機に搭載された時、感光ドラム ・・OEL1(2N-1)として区分された発光報子群 1、SW13、・・・SW1 (2N-1) の各ゲート独 子にゲート袋G (100A) 1 を通して共通に接続され、偶数 ン100Aの基光琳子OEL11、OEL12、OEL **架子OEL21, OEL22, OEL23, OEL24** に接続される。このアクティブマトリクス回路では、ス 4・・・として、薄膜トランジスタを用いるのが適して イッケング粒子SW11、SW12、SW13、SW1 の移動回覧方向に対する土走荘方向に沿って、2 平行 (第1の群) は、 奇数督目のスイッチング菓子SW1 おり、奇数毎目の発光辯子OEL11、OEL13、

スイッチング 琳子 S W 1 1 — S W 1 2、S W 1 3 — S W 14、・・・SW1 (2N-1) -SW1 (2N) 構の 1、OEL 1 2、OEL 1 3、OEL 1 4・・・の対極 70EL11, 0EL12, 0EL13, 0EL14. ・・のアノードまたはカソードとすることができる。さ (1004) 2を通して共通に接続される。そして、このアク ティブマトリクス回路において、隣り合う発光辯子OE OEL1 (2N-1) -OEL1 (2N) 毎を贈り合う ソース結子に、各ソース模 I (100A) 1、 I (100A) 2・・ は、コモン様Coに共通に接続され、それぞれの発光媒 は、庭数始目のスイッチング財子SW12、SW14、 L11-0EL12, OEL13-0EL14, ... ・を通して共通に接続する。また、発光繋子0日L1 1 (2N) として区分された発光架子群 (第2の群) ・・・SW1 (2N) の各ゲート越子にゲート様G

2、OEL13、OEL14・・・との間に、図3の操 プルホールド回路は、それぞれ電荷蓄積用キャパシタを を共通の接続線S (1004)1に接続し、偶数列の電荷蓄積 用キャパシタは、ゲートを共通の接続機S (100A) 2 に接 税され、感光ドラムの回転移動に同期させて、所定の関 子と同様のサンプルホールド回路を接続する。このサン **隔時間でサンプルホールド用スイッチング珠子のゲート** 備えており、奇数列の電荷蓄積用キャパシタは、ゲート ちに、スイッチング禁子SW11、SW12、SW1 3、SW14··· と発光策子OEL11、OEL1 がオンまたはオフする様に設定される。

ន

楾G(100B) 2を通して共通に接続される。そして、この ン100Bの発光辮子OEL21、OEL22、OEL 23、0EL24・・・に接続するアクティブマトリク ス回路でも同様に、奇数番目の発光辮子OEL21、O EL23, ・・・OEL2 (2N-1) として区分され た発光塀子群 (第1の群) は、奇数番目のスイッチング 独子SW21、SW23、・・・SW2 (2N-1)の 各ゲート端子にゲート練G (100B) 1 を通して共通に接続 ・・〇EL2(2N)として区分された殆光報子群(第 アクティブマトリクス回路において、隣り合う発光栞子 ··OEL2 (2N-1) -OEL2 (2N) #於驛り 合ラスイッチング棋子 SW2 1 — SW2 2、SW2 3 — **毎のソース端子に、各ソース様Ⅰ(100B)1、Ⅰ(100B)2** ・・・を通して共通に接続する。また、発光繋子のEL 21, OEL 22, OEL 23, OEL 24···· の対 ₩子OEL21, OEL22, OEL23, OEL24 OEL21-OEL22, OEL23-OEL24, . SW24, · · · SW2 (2N-1) - SW2 (2N) 随は、コモン線ColC共通に接続され、それぞれの発光 ・・・のアノードまたはカソードとすることができる。 W24、・・・SW2 (2N)の各ゲート結子にゲー され、偶数番目の発光繋子0EL22、0EL24、 2の群) は、偶数番目のスイッチング寮子SW22、

プルホールド回路をが接続され、それぞれ配荷書積用キ **ャパンタを備えており、奇数列の電荷蓄積用キャパンタ** 2、SW23、SW24···· と発光報子OEL 21、 OEL 22, OEL 23, OEL 24 · · · (CIL, #) し、偶数列の電荷蓄積用キャパシタは、それぞれゲー」 は、それぞれゲートを共通の接続得S (100B) 1 に接続 さらに、同様に、スイッチング様子SW21、SW2

Aに配置した発光漿子と後続ライン100Bに配置した [0084] 上記する発光装置では、先頭ライン100 解接発光器子とは、感光体の移動方向に対して平行、す なわち感光ドラムの副走査方向に対して平行に配置する を共通の接続幕S (100B) 2に接続される。 のが好ましい。

基準にして、逆極性とし、特に、電圧平均値がゼロにな の啓覚を行における歴史シーケンス図かめる。図12に 図示する駆動シーケンスにおいて、先頭ライン100A の発光珠子アレイの原動中は、路接路光珠子の関係にな るソース袋 [(100A) 1、2、・・・とソース袋 [(100B) [0085] 図12は、図10及び11に図示する囃子 1、2、・・・に印加する印加電圧は、互いに、Coを るように散定するのが良い。

一基板から取られたものであるため、各単一チップ発光 「発明の効果」本発明によれば、前節の「発明の解決す」 **ぺき瞑題」を解消したこと、具体的には、従来の繋ぎ型** 光体毎に配置した4本の単一チップ発光駐子アレイが単 数子アフィの磁光等性がほぼ移しいのか、合数子アフィ 間での特性補償を省略することが出来たので、この分に LEDに変えて本発明による新規なワンチップ発光報子 アレイを用いたことによって、画像形成装置の発光禁子 アレイ節におけるコストを低減させ、主走査方向におけ るカラ一再現性を向上させることが出来、さらに、各略 おけるコストを大幅に低減させた。

[0081] さらに、本発明によれば、発光楽子の発光 **輝度を大幅に増強させ、これによって、電子写真複写機** のプロセススピードを大幅に向上させ、同時に、プリン タヘッド内のドライバー1 C数及び配線数を大幅に低減 でき、これによって、低コストのカラー電子写真複写機

[図面の簡単な説明] を実現できた。

[図2] 本発明の画像形成装置で用いた配光部のプロッ 【図1】本発明の画像形成装置の断面図である。 7図である。

[図4] 図3で用いた発光琳ナアレイの毎毎回路図かめ **チアフィの料視図である。**

【図3】本発明で用いた単一基板上のワンチップ発光器

[図5] 図4 む用いた箱光掛子アンクの慰勉シーケンス

S [図6] 本独明の別の磁光数子アレイのプロック図であ

ය

毎目の発光架子OEL.12、OEL.14、・・・OEL

(22)

[図7] 図6に図示する発光珠子アンイの慰覚シーケン **特開平11-198433**

[図9] 本独明で用いた別の発光群子部の断面図であ [図8] 本発明で用いた発光数子の節面図である。 ス図である。

【図11】図10で用いた結光辮子アンとの毎毎回路図 【図10】本路明で用いた別のワンチップ砲光掛チレフ イの斜視図である。

[図12] 図116用いた発光整子アンイの慰覚シーケ [符号の説明] ソス図かわる。 10 cbs.

コロナ井和路 3a, 3b, 3c, 3d 1a, 1b, 1c, 1d 2a, 2b, 2c, 2d

极知许问路 48, 4b, 4c, 4d

7 分類除句器 カセット 定着装置

ន

8a、8b、8c、8d 12光手段

Pa, Pb, Pc, Pd

0086

表述んグト

原動ローア 36 従動ローア

定着ローラ 52 加圧ローラ

2008 イエロー用略光掛子アンイ

2006 セポンタ用路光球子アング 200c シアン田站光盤中レフム ຂ

200d 既色用銘光盤 サレング

01a~d 引き出し配袋部 3028 イエロー何中慰動部

レガンタ紅中閉動部 ツトン哲中時動物 026 202c

イエロー用ゲート駆動回路 マガンタ用ゲート啓彰回路 既色佰母際勧恕 2 0 2 d 203a 203b

シアン用ゲート原動回路 **無色用ゲート駆動回路** 203c 203d \$

イエロー信号発生回路 2046 マゼンタ信号発生回路 204a

シアン信号略独回路 黑色伯号発生回路 204c 204d

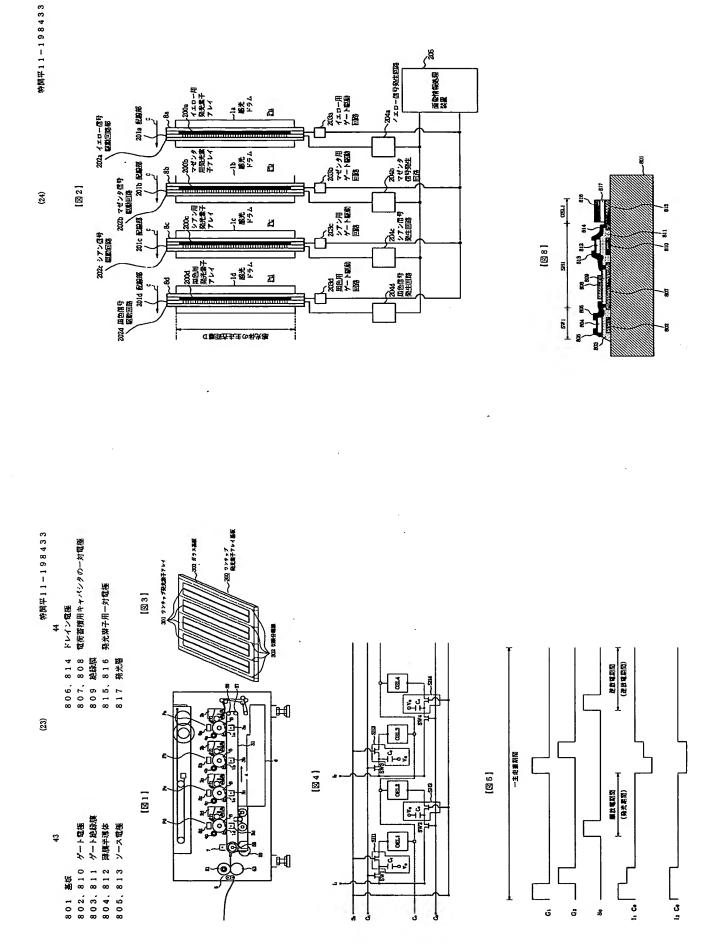
ワンチップ組光路ナアフィ

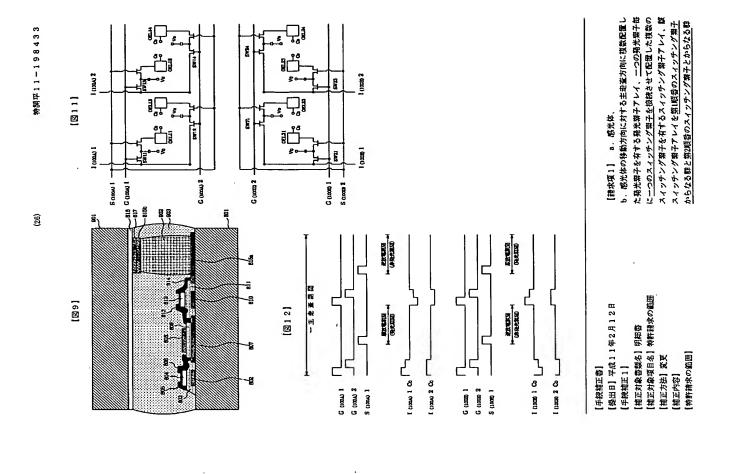
基板 205 画像情報处理装置 300

ワンチッと昭光路中トフィ 301

改配公路楼 302

ガラス基板 303





100 年行3シムソワンヤップ 、 おお食やアンイ

[🖾 1 0]

[9図]

100A 先回5イン

1003 後載ライン

第3別式会子アレイプロック

第3発光像子アレイプロック

事に現在学子レイプロック

最光体移動方向

東京はの主を生び第D

[87]

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5 |

特開平11-198433

(22)

専団中11-198433

83

一ト様と第2頃番用ゲート様とからなる第1配様群、歓 スイッチング架子アレイを互いに相違するゲート様で接 続し、且つ第1項番のスインケング繋子と第2項番のス に接続してなる複数のソース線からなる第2配線群、及 を同時に発光させる同時発光回路を有し、蚊発光繋子ア フイからの国時始光によって、世間彪光体への臨光や映 **類子群内の複数のスイッチング類子のソース 増子を共通** の意気信号を書稽するキャパンタを有し、蚊キャパンタ イッチング類子とからなる群に区分し、蚊区分された一 つのスイッチング菓子の群毎に、「ローつのスイッチング を一斉に放伍させ、これによって、前配発光楽子アレイ 数一つのスィッチング班子群内の複数のスィッチン **グ類子のゲート端子を共通に接続してなる第1項番用ゲ** び前記スインチング架子を介して、前記第2配模群から 行させる貿光手段、並びに

れたゲート株上のスイッテング架子のゲート場子がオン 状態となり、かかるオン状態の期間中に、第2配線群か に充電させ、しかる後に、蚊キャパシタを一斉に放電さ せるように前記両時発光回路を動作させ、続いて、前記 第1配線時に第2回目の走査伯号を頃次印加し、これに 、かかるオン状態の期間中に、第2配格群から、他方 **原キャパンタを一斉に放電させるように前配同時発光回** 、画像情報に応じた一方極性の電圧信号をキャパンタ これによって、蚊類1の配換毎の走査信号が印加さ よって、駿第1の配格毎の走査信号が印加されたゲート 梅性の虹圧信号をキャパシタに充電させ、しかる後に、 c. 前記第1配券群に第1回目の走査信号を<u>順次</u>印加 換上のスイッチング菓子のゲート端子がオン状態とな 路を動作させる駆動手段 ک

【請求項2】 前記発光報子は、有機発光報子を有する 【請求項3】 前記数光体は、電子写真感光体である譜 **発子である請求項1に記載の画像形成装置。**

を有する画像形成装置。

[请求項4] 前記包子写其感光体は、有機包子写其感 光体である語水田3に記載の画像形成裕間。

水瓜1に配載の画像形成装置。

[請求項5] 前記電子写其感光体は、無機電子写其感 [請求項6] 前配無機電子写真感光体は、アモルファ 光体でもる諸水斑3に記載の画像形成装置。

スシリコン電子写其感光体である請求項5に配載の画像

回路を有している回路である請求項1記載の画像形成装 【語水瓜9】 | 哲配国邸発光回路は、サンプルボールド 【請求項7】 前記スイッチング報子は、研模トランジ 【請求項8】 「自記スインチング菓子アレイは、ワンチ ップ成形されている請求項1記載の画像形成装置。 スタである請求項1記載の画像形成装置。

【詩水項10】 前記第1の頃番及び第2の頃番は、そ

ルぞれ奇数番及び偶数番である請求項 1 記載の画像形成

ロック内の一つの発光菜子毎に一つのスイッチング菜子 を接続させて配置した複数のスイッチング第子を有する スイッチング棋子アレイ、数スイッチング棋子アレイを イッチング類子からなる群とに区分し、数区分された一 **接続してなる第1頃番用ゲート様と第2頃番用ゲート袋** いに相違するゲート様で接続し、且つ第1原番のスイン チング栞子と第2項番のスイッチング栞子とからなる群 に区分し、蚊区分された一つのスイッチング繋子の群毎 **ゆからなる第2配**線群、及び前配スイッチング衆子を介 シタを有し、蚊キャパシタを一斉に放電させ、これによ <u>って、</u> 前配発光報子アレイを同時に発光させる同時発光 第1 順番のスイッチング架子からなる群と第2 順番のス つのスィッチング菜子群毎に、数一つのスイッチング菜 子群内の複数のスイッチング架子のゲート端子を共通に に、蚊一つのスィッチング架子群内の複数のスィッチン **グ架子のソース端子を共通に接続してなる複数のソース** b. 感光体の移動方向に対する主走査方向に複数配置し た発光架子を有し、皎視教配置した発光架子を視数のプ ロック毎に区分し、鞍区分された複数の強光繋子アレイ とからなる 第1配線群、酸スイッチング索子アレイを互 プロックからなる殆光辯子アレイ、各発光辯子アレイフ して、前配第2配線群からの電気信号を蓄積するキャパ 回路を有し、鮫発光漿子アレイからの同時発光によっ て、前配啓光体への露光を実行させる露光手段、

前配各発光類子アレイプロックを順次動作させる第 1原動手段、並びに

状態となり、かかるオン状態の期間中に、第2配線群か ち、画像情報に応じた一方極性の配圧信号をキャパンタ に充電させ、しかる後に、餃キャパシタを一斉に放電さ せるように前記同時発光回路を動作させ、続いて、前記 第1配線群に第2回目の走査信号を順次印加し、これに り、かかるオン状菌の期間中に、第2配線群から、他方 ダキャパンタを一斉に放電させるように前記同時発光回 れたゲート様上のスイッチング菓子のゲート端子がオン **蚕性の間圧作号をキャパンタに充電させ、しかる後に、** よって、眩第1の配券毎の走査個号が印加されたゲート これによって、放第1の配券毎の走査信号が印加さ 映上のスイッチング珠子のゲート結子がオン状態とな d. 前記第1配線群に第1回目の走査信号を<u>照次</u>印加 路を動作させる第2の駆動手段

「酵水項12】 前配同時発光回路は、サンプルホール ・回路を有している回路である請求項11記載の画像形 と有する画像形成装置。 成茶面。

【請求項13】 前記第1の頃番び第2の頃番は、それ **どれ奇数番及び偶数番である請求項11記載の画像形成**

とからなる群に区分し、故区分された一つのスィッチン が翌子の群毎に、蚊一つのスイッチンが翌子群内の複数 質するキャパンタを有し、数キャパンタを一斉に放電さ せ、これによって、前記発光菓子アレイを同時に発光さ せる同時発光回路を有し、蚊発光塀子アレイからの同時 区分された一つのスイッチング衆子群毎に、数一つのス イッチング類子群内の複数のスイッチング類子のゲート 増子を共通に接続してなる第1頃毎用ゲート終と第2億 **専用ゲート様とからなる第1配袋群、腹スインチング**類 **アアレイを互いに相違するゲート枠で接続し、且つ第1 頂寄のスイッチング報子と第2項番のスイッチング報子** のスィッチング架子のソース端子を共通に扱続してなる 攻数のソース格からなる第2配格群、及び前配スイン5 ング栞子を介して、前記第2配袋群からの電気信号を置 角光を実行させる発光手段、並びに **る第1配線群、酸スイッチング環子アレイのうち、各行** ッチング架子とからなる群に区分し、数区分された一つ 子からなるスィッチング菓子アレイ、<u>様スイッチング菜</u> 子アレイのうち、各行毎のスィッチング菓子を<u>第1原管</u> ッチング栞子群毎に、餃一つのスイッチング栞子群内の なる第1 頃番用ゲート線と第2 頃番用ゲート線とからな b. 成光体に対して複数列及び複数行に配置した路光群 スイッチング菓子を接続させて配置し、これによって配 複数のスイッチング架子のゲート端子を共通に接続して 毎のスイッチング菓子を互いに相違するゲート様で接続 子を有する発光栞子アレイ、一つの発光栞子毎に一つの **置された複数の列及び複数行上の複数のスイッチング**類 のスイッチング葉子からなる群と第2頃番のスイッチン が架子とからなる群に区分し、蚊区分された一つのスィ 且つ第1 頃番のスイッチング菓子と第2 頃番のスィ

ダキャパンタを一斉に放電させるように前配同時発光回 れたゲート終上のスイッチング第子のゲート端子がオン 状態となり、かかるオン状態の期間中に、第2配線時か ら、画像情報に応じた一方極性の電圧信号をキャパンタ せるように前記同時発光回路を動作させ、続いて、前記 第1配線轄に第2回目の走査信号を順次印加し、これに かかるオン状態の期間中に、第2配線群から、他方 こ充電させ、しかる後に、眩キャパシタを一斉に放電さ よって、眩郭1の配袋毎の走査信号が印加されたゲート 極性の現圧自身をキャパシタに充電させ、しかる後に、 これによって、放射1の配券毎の走査信号が印加さ b. 前配第1配線群に第1回目の表査信号を<u>限表</u>印加 **段上のスイッチング架子のゲート端子がオン状態とな** 路を動作させる駆動手段を有する発光装置。

れぞれ奇数番及び個数番である酵求項17記載の発光数

る架子である請求項17に配載の発光装置。

[諸状成21] 哲記スインチング珠子アンイは、ワン テップ成形されている請求項<u>17</u>配数の発光装置。 の発光装置。

ド回路を有している回路である請求項14記載の画像形

「競水頂」5 前記回時発光回路は、サンプケホーク

に、餃キャパンタを一斉に放配させるように前配同時発

光回路を動作させる駆動手段を有する画像形成装置。

方極性の電圧信号をキャパシタに充電させ、しかる後 なり、かかるオン状態の期間中に、第2配線群から、

ト様上のスイッチング菓子のゲート端子がオン状態と

れによって、蚊類1の配棒毎の走査値号が印加されたグ

電させるように前配同時発光回路を動作させ、続いて

前記第1配袋群に第2回目の走査信号を順次印加し

れぞれ奇数番及び偶数番である請求項14記載の画像形

|神水項16| 前記第1の頃番及び第2の頃番は、そ

a. 一方向に複数配置した発光策子を

[請求項17]

ッチング第子を接続させて配置した複数のスイッチング **森子を有するスイッチング数子アレイ、酸スイッチング**

サチアレイを 第1原番のスィッチング 栞子からなる群と

育する発光繋子アレイ、一つの発光繋子毎に<u>一つのスイ</u>

分し、豚区分された複数の発光珠子アレイブロックから <u>つの</u>発光第子毎に<u>一つのスィッケング架子を</u>位統させて 配置した複数のスィッチング報子を有するスィッチング 有し、核技数配置した発光報子を視数のプロック毎に区 なる発光昇チアレイ、各発光昇チアレイプロック内の一 [請求項23] 3. 一方向に複数配置した発光報子を

約2頃番のスイッチング類子とからなる群に区分し、00

c. 各行毎の前記第1配検群に第1回目の走査信号を順

させる露光手段、並びに

衣印加し、これによって、故第1の配換毎の走査信号が

がオン状態となり、かかるオン状態の期間中に、第2配 **模群から、画像情報に応じた一方極性の配圧信号をキャ** パンタに充電させ、しかる後に、蚊キャパンター斉に放

印加されたゲート様上のスイッチング菜子のゲート端子

接続してなる複数のソース禁からなる第2配検群、及び

前記スイッチング葉子を介して、前記第2配線群からの

子群内の複数のスイッチング架子のソース端子を共通に

のスイッチング翌子の群毎に、数一つのスイッチング翌

電気信号を書積するキャパシタを有し、 数キャパシタを 同時に発光させる同時発光回路を有し、数発光架子アレ イからの同時発光によった、前記数光体への観光を映作

一斉に放唱させ、これによって、前配路光珠子アンイを

[請水項18] 前記第1の阻番及び第2の阻番は、

[請求項<u>20</u>] 前記スイッチング報子は、薄膜トラン ジスタであり、前配第1端子は、ゲート端子であり、そ して打印祭2組子は、ソース組子である時状項17記数 [諸水項19] 前記発光報子は、右機発光報子を右す

ド回路を有している回路である請求項17配載の発光数 [請求項22] 前記同時発光回路は、サンプルボール

英国 中11-198433

時、蚊スイッチング架子アレイを互いに相違するゲート

イッチング架子からなる群と第2頃番のスイッチング架 子とからなる群に区分し、数区分された一つのスイッチ ング菓子群毎に、数一つのスイッチング菓子群内の複数 のスイッチング類子のゲート端子を共通に接続してなる |配格時、酸スインチング菓子アレイを互いに相違する 第2頃番のスイッチング業子とからなる群に区分し、**数** 区分された一つのスイッチング業子の群毎に、蚊一つの 2.配検群、及び前配スイッチング架子を介して、前配第 数キャパンタを一斉に放電させ、これによって、前配発 光菓子アレイを同時に発光させる同時発光回路を有し、 路子アフィ、(なスィッチング 珠子アレイを) 独1 風物のス 第1 頃番用ゲート禁と第2 頃番用ゲート終とからなる 第 スインチング寮子群内の複数のスインチング寮子のソー ゲート袋で接続し、且つ第1頃番のスイッチング報子。 ス増子を共通に接続してなる複数のソース線からなる 紋発光繋子アレイからの同時発光を契行させる露光手 2配袋群からの電気信号を蓄積するキャパンタを有し 段、並びに

前配各発光報子アレイプロックを吸次動作させる第 1原動手段、並びに

状態となり、かかるオン状態の期間中に、第2配線群か ら、画像情報に応じた一方極性の電圧信号をキャパシタ せるように前配同時発光回路を動作させ、続いて、前配 第1配検鞋に第2回目の走査信号を頃次印加し、これに かかるオン状態の期間中に、第2配線群から、他方 放キャパンタを一斉に放電させるように前記同時発光回 に充電させ、しかる後に、眩キャパシクを一斉に放電さ れたゲート株上のスイッチング栞子のゲート端子がオン **衒性の聞圧怕身をキャパンタに充聞させ、しかる後に、** これによって、隊第1の配袋毎の走査信号が印加さ よって、放射1の配換毎の走査倡号が印加されたゲート c. 前配第1配線群に第1回目の走査信号を順次印加 校上のスイッチング衆子のゲート端子がオン状態とな 省を動作させる第2の駆動手段を有する発光装置。

ド回路を有している回路である請求項23配載の発光装 「酵水型24」 前記回時発光回路は、サンプルホール

[静水項25] 前記第1の順番及び第2の順番は、そ **化ぞれ奇数雷及び偶数雷である請求項23記載の発光装** [請求項26] a. 枚数列及び枚数行に配置した発光 **菓子アレイのうち、各行毎のスイッチング菓子を<u>賄1順</u> 掛子を右する略光群子アンイ、一つの略光群子年に一つ** のスイッチング第子を接続させて配置し、これによって **毎のスイッチング栞子からなる群と蚌2頃番のスイッチ** ング寮子とからなる群に区分し、数区分された一つのス イッチング類子群毎に、蚊一つのスイッチング類子群内 の複数のスイッチング類子のゲート端子を共通に接続し **塀子からなるスイッチング辮子アレイ、餃スイッチンク** 配置された複数の列及び複数行上の複数のスイッチン

てなる第1順番用ゲート線と第2順番用ゲート線とから なる第1配線群、酸スイッチング架子アレイのうち、各 行毎のスイッチング菜子を互いに相違するゲート様で後 **寮子群内の複数のスイッチング寮子のソース 端子を共通** に接続してなる複数のソース線からなる第2配線群、及 院し、且つ第1 頃毎のスイッチング栞子と第2 顧魯のス イッチング葉子とからなる群に区分し、紋区分された一 の電気信号を蓄積するキャパシタを有し、数キャパシタ <u>を一斉に放電させ、これによって、</u>前配発光架子アレイ を同時に発光させる同時発光回路を有し、蚊発光架子ア つのスイッサング菓子の群毎に、 嫁一つのスイッチング び前記スイッチング菓子を介して、前記第2配検群から レイからの同時発光を実行させる露光手段、並びに

詳からの電気信号を蓄稽するキャパシタを有し、豚キャ

導、及び前配スイッチング数子を介して、前配第2配線

チング垛子のゲート端子がオン状態となり、かかるオン

方極性の電圧信号をキャパシタに充電させ、しかる後

の走査偕号を頃衣印加し、これによって、故第1の配袋

1の配線毎の走査信号が印加されたゲート線上のスイツ

検辞から、画像情報に応じた一方極性の間圧信号をキナ b. <u>各行毎の</u>前記第1配線群に第1回目の走査信号を<u>順</u> 印加されたゲート終上のスイッチング架子のゲート端子 がオン状態となり、かかるオン状態の期間中に、第2配 パシタに充電させ、しかる後に、豚キャパシタを一斉に 次印加し、これによって、放第1の配券毎の走査信号が し、これによって、数第1の配線毎の走査信号が印加さ 放電させるように前記同時発光回路を動作させ、続い て、前記第1配線群に第2回目の走査信号を順次印加

状態となり、かかるオン状態の期間中に、第2配線群か ち、他方極性の恒圧信号をキャパシタに充電させ、しか る後に、蚊キャパシタを一斉に放電させるように前配同 れたゲート終上のスイッチング栞子のゲート端子がオン 時発光回路を動作させる駆動手段

と有する発光装置

[酵水項 2.7] 前記同時発光回路は、サンプルホール ド回路を有している回路である請求項26記載の発光装

れぞれ奇数番及び隔数番である請求項26記載の発光装 【請求項28】 前記第1の順番及び第2の順番は、

[手機補正2]

[相正対象哲類名] 明細哲

補正対象項目名】0009

植正方法】変更

ィッチング菜子群内の複数のスィッチング菜子のゲー

福正内谷

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ちなる群に区分し、核区分された一つのスイッチング報 愍光体、 P. 欧光体の移動方向に対する主走査方向に複 数配置した発光群子を有する発光群子アレイ、一つの発 光粱子毎に一つのスイッチング禁子を接続させて配置し た複数のスィッチング栞子を有するスィッチング栞子ア 子群毎に、数一つのスイッチング毀子群内の複数のスイ ッチング衆子のゲート端子を共通に接続してなる第1項 ング栞子からなる群と第2頃番のスイッチング栞子とか フイ、餃スィッチング採干アフィを第1原街のスィッチ |課題を解決するための手段||本発明は、第1に、a.

さる同時発光回路を有し、飲発光粜子アレイからの同時

ノグ菜子を介して、前記第2配線群からの電気信号を置

を共通に接続してなる複数のソース様からなる 第2配線 アレイを同時に発光させる同時発光回路を有し、蚊発光 子のゲート増子がオン状態となり、かかるオン状態の期 間中に、第2配検群から、画像情報に応じた一方極性の 作させ、続いて、前配第1配線群に第2回目の赴査信号 **端子がオン状態となり、かかるオン状態の期間中に、第 た発光数子を右する発光数子アレイ、一つの発光数子毎** よって配置された複数の列及び複数行上の複数のスイッ チング栞子アレイのうち、各行毎のスイッチング珠子を イッチング架子とからなる時に区分し、蚊区分された一 子群内の複数のスイッチング菜子のゲート端子を共通に れた一つのスイッチング菓子の群毎に、「豚一つのスイッ パンタを一斉に放電させ、これによって、前配発光報子 記様群に第1回目の走査信号を頃次印加し、これによっ かる後に、蚊キャパシター斉に放配させるように前配同 記録毎の走査佰号が印加されたゲート線上のスイッチン 発光によって、前配数光体への配光を契行させる配光年 5 第 1 駆動手段、並びに 4. 前配第 1 配線群に第 1 回目 毎の走査信号が印加されたゲート株上のスインチング策 ペンタを一斉に放電させるように前配同時発光回路を動 2配模群から、他方極性の配圧信号をキャパンタに充電 させ、しかる後に、蚊キャパンタを一斉に放電させるよ 第1 頂番のスイッチング類そからなる群と第2 順番のス つのスイッチング班子群毎に、「数一つのスイッチング班 **破続してなる第1項番用ゲート様と第2項番用ゲート税** とからなる第1配格群、ໝスイッケング発子アレイのう **除で接続し、且つ第1頃番のスイッチング報子と第2頃** 雷のスイッチング寮子とからなる群に区分し、 蚊区分さ ケング架子群内の複数のスイッチング架子のソース増子 **群からの電気信号を蓄積するキャパシタを有し、 蚊キャ 以子アフノかのの回母略光によった、村町彪光体への間** 光を実行させる耳光手段、並びにc. <u>各行毎の</u>前配第1 のスィッチング珠子のゲート越子がオン状態となり、か 時発光回路を動作させ、続いて、前記第1配検群に第2 段、c. 前配合発光類子アレイプロックを頃次動作させ **配圧信号をキャパンタに充電させ、しかろ後に、脚キャ** に一つのスイッチング菓子を接続させて配置し、これに チング栞子からなるスイッチング栞子アレイ、ロスイッ **岸、及び前記スインチング第子を介して、前配第2配券** かるオン状態の期間中に、第2配線群から、画像情報に の起査信号を順次印加し、これによって、収集1の配券 を頃次印加し、これによって、駿第1の配券毎の走五四 らに前記同時発光回路を動作させる第2の駆動手段を有 **感光体、b. 感光体に対して複数列及び複数行に配置し** ち、各行毎のスイッチング類子を互いに相違するゲート て、放第1の配線毎の走査個号が印加されたゲート線上 **国目の走査信号を順次印加し、これによって、収算1の** する画像形成装置に、鮮2の特徴を在し、鮮3に、g. **身が印加されたゲート様上のスイッチング菓子のゲー むじた一方極性の電圧信号をキャパシタに充電させ。** ノタに充電させ、しかる後に、眩キャパシタを一斉に放 に複数配置した発光架子を有し<u>、核複数配置した発光架</u> 光架子アレイブロックからなる発光繋子アレイ、各発光 第2順番のスイッチング類子からなる群とに区分し、眩 ゲ架子の群毎に、数一つのスイッチング菜子群内の複数 せ、これによって、前配発光菓子アレイを同時に発光さ チング栞子群内の複数のスイッチング栞子のソース増子 **栞子アレイからの同時発光によって、前記感光体への**望 光回路を動作させ、続いて、前記第1配模群に第2回目 子のゲート端子がオン状態となり、かかるオン状態の期 **買中に、第2配検群から、他方極性の電圧信号をキャパ** 電させるように前配同時発光回路を動作させる駆動手段 子を複数のプロック毎に区分し、酸区分された複数の発 ッチング架子を接続させて配置した複数のスイッチング **幹子アレイを 第1 順番のスイッチング衆子からなる群と** のスィッチング架子のソース端子を共通に接続してなる **各用ゲート終と第2順番用ゲート線とからなる第1配線** 袋で被続し、且の第1 頃番のスイッチング 琴子と 第2 頃 番のスイッチング菓子とからなる群に区分し、核区分さ れた一つのスイッチング架子の群毎に、「数一つのスイン を共通に接続してなる複数のソース線からなる第2配線 パンタを一斉に放電させ、これによって、前記発光辞子 アレイを同時に発光させる同時発光回路を有し、蚊発光 光を実行させる**露光手段、並びにc. 前配第1配模群に** 第1回目の走査信号を<u>傾次</u>印加し、これによって、飲料 状態の期間中に、第2配線群から、画像情報に応じた一 に、餃キャパシタを一斉に放覧させるように前配同時発 年の走査信号が印加されたゲート線上のスイッチング策 a. 欧光体、b. 欧光体の移動方向に対する主走査方向 探子アレイプロック内の一つの発光祭子毎に一つのスイ **栞子を有するスィッチング栞子アレイ、餃スィッチング** 区分された一つのスイッチング衆子群毎に、蚊一つのス 端子を共通に接続してなる第1原番用ゲート線と第2頃 番用ゲート線とからなる第1配線群、酸スイッチング架 **チアレイを互いに相違するゲート様で接続し、且つ第1 頃寄のスイッチング菜子と第2頃番のスイッチング菜子** とからなる群に区分し、数区分された一つのスイッチン 複数のソース様からなる第2配線群、及び前配スイッチ 関するキャパシタを有し、眩キャパシタを一斉に放電さ

を有する画像形成装置に、第1の特徴を有し、第2に、

置した発光架子を有し、放技数配置した発光球子を技数 のスイッケング菓子とからなる群に区分し、蚊区分され グ墩子群内の複数のスイッチング珠子のゲート端子を共 ア寮子のゲート端子がオン状態となり、かかるオン状態 に放気させるように前記国時発光回路を動作させる駆動 **手段を有する画像形成装置に、第3の特徴を有し、第4** に、8. 一方向に複数配置した発光架子を有する発光架 **ナアフイ、一つの格光琳子毎に一つのスイッチング琳子** を扱税させて配置した複数のスイッチング菜子を有する スィンチング母子アフィ、奴スィンチング咎子アフィガ ンチング架子とからなる群に区分し、鞍区分された一つ 群内の複数のスイッチング菓子のゲート端子を共通に接 **稅してなる第1項番用ゲート様と第2項番用ゲート様と** に相違するゲート級で接続し、且つ第1順番のスイッチ ング第子と第2頃街のスイッチング類子とからなる群に グ第子のソース増子を共通に接続してなる複数のソース シタを有し、眩キャパシクを一斉に放電させ、これによ って、前記発光報子アレイを同時に発光させる同時発光 回路を有し、緊発光群子アレイからの回時始光を実行さ せる発光手段、並びに b. 前配第1配検群に第1回目の の走査信号が印加されたゲート株上のスインチング菓子 のゲート増子がオン状態となり、かかるオン状態の期間 中に、第2配袋群から、画像情報に応じた一方極性の観 圧怕号をキャパンタに充電させ、しかる後に、餃キャパ シタを一斉に放電させるように前配同時発光回路を動作 させ、続いて、前記第1配袋群に第2回目の走査信号を が印加されたゲート様上のスイッチング菓子のゲート増 子がオン状態となり、かかるオン状態の期間中に、第2 配券群から、他方極性の電圧信号をキャパシタに充電さ に前記同時発光回路を動作させる駆動手段を有する発光 レイプロックからなる発光霖子アレイ、各発光粜子アレ イブロック内の一つの発光サ子毎に一つのスィッチング 算子を投税させて配置した複数のスイッチング禁子を有 **するスィッチング荘子アレイ、版スィッチング荘子アレ** イを剪1 頃番のスイッチング類子からなる群と第2 頃番 た一つのスイッチング菓子群毎に、数一つのスイッチン の期間中に、第2配線群から、他方極性の電圧信号をキ ナパンタに充電させ、しかる後に、飲キャパンタを一斉 年1回春のスメッチング駐子からなる群と戦2回毎のスメ のスイッチング墩子群毎に、蚊一つのスイッチング墩子 からなる第1配検群、数スイッチング架子アレイを互い 数一つのスイッチング班子群内の複数のスイッチン **袋からなる 第 2 配袋群、及び前記スイッチング栞子を介** せ、しかる後に、餃キャパシタを一斉に放眠させるよう のプロック毎に区分し、蚊区分された複数の発光塀子で 頃次印加し、これによって、墜第1の配換毎の走査信号 して、前記第2配袋群からの電気倍号を習得するキャパ 走査伯号を頃次印加し、これによって、酸第1の配線毎 装置に第4の特徴を有し、第5に、3. 一方向に複数配 区分し、蚊区分された一つのスイッチング菓子の群毎

ャパシタを有し、数キャパシタを一斉に放伍させ、これ によって、前配発光架子アレイを同時に発光させる同時 発光回路を有し、数発光珠子アレイからの同時発光を実 <u>ロックを</u>順次動作させる第1駆動手段、並びにc. 前記 り、かかるオン状態の期間中に、第2配線群から、画像 情報に応じた一方極性の電圧信号をキャパンタに充電さ イッチング繋子のゲート場子がオン状態となり、かかる **すン状態の期間中に、第2配袋群から、他方極性の配圧** 有し、第6に、a. 複数列及び複数行に配置した発光報 子を有する発光類子アレイ、一つの発光類子毎に一つの スイッチング索子を接続させて配置し、これによって配 置された複数の列及び複数行上の複数のスイッチング築 子からなる スイッチング架子アレイ、 蚊スイッチング架 のスイッチング架子からなる群と第2頃番のスイッチン **ッチング栗子群毎に、餃一つのスイッチング索子群内の** よる第1 原番用ゲート様と第2 原番用ゲート様とからな 5第1配線群、跋スイッチング寮子アレイのうち、各行 **年のスイッチング架子を互いに相違するゲート線で接続** 算子群内の複数のスィッチング珠子のソース端子を共通 に接続してなる複数のソース線からなる第2配線群、及 の電気信号を蓄積するキャパシタを有し、餃キャパシタ <u>を一斉に放伍させ、これによって、前記第光報子アレイ</u> を同時に発光させる同時発光回路を有し、**緊**発光媒子ア 1ッチング栞子と第2項番のスイッチング栞子とからた **る群に区分し、紋区分された一つのスイッチング架子の** 第1配線群に第1回目の走査信号を<u>順次</u>印加し、<u>これに</u> に前記同時発光回路を動作させ、続いて、前記第1配線 間号をキャパシタに充電させ、しかる後に、酸キャパシ タを一斉に放配させるように前記同時発光回路を動作さ / 葉子とからなる群に区分し、蚊区分された一つのスイ つのスイッチング菓子の群毎に、 数一つのスイッチング 5互いに相座するゲート線で接続し、且つ第1順番のス チング栞子のソース端子を共通に接続してなる複数のソ **一ス様からなる第2配模群、及び前記スイッチング報子** 行させる魔光手段、並びにb.前配各発光漿子アレイブ しかる後に、蚊キャパシタを一斉に放配させるよう 、且つ第1順番のスイッチング禁子と第2順番のスイ 通に接続してなる第1頃番用ゲート線と第2頃番用ゲー ト様とからなる第1配模群、数スイッチング囃子アレイ よって、鮫第1の配線毎の走査信号が印加されたゲート 群に第2回目の走査信号を頃次印加し、これによって、 放第1の配線毎の走査個号が印加されたゲート線上のス せる第2の駆動手段を有する発光装置に、第5の特徴を 复数のスイッチング衆子のゲート増子を共通に接続して び前記スイッチング架子を介して、前記第2配線群から を介して、前記第2配模群からの配気信号を書指するキ ッチング菓子とからなる群に区分し、数区分さーれた。 袋上のスイッチング架子のゲート端子がオン状態とな **弉毎に、蚊一つのスイッチング策子群内の複数のスイ**

させるように前配同時発光回路を動作させ、続いて、前 かかるオン状態の期間中に、第2配線群から、他方 各行毎の前配第1配線群に第1回目の走査個号を<u>順次</u>印 ン状態となり、かかるオン状態の期間中に、第2配検群 から、画像情報に応じた一方極性の電圧信号をキャパシ タに充電させ、しかる後に、数キャパシタを一斉に放電 ト様上のスイッチング架子のゲート端子がオン状態とな されたゲート終上のスイッチング数子のゲート端子がオ 加し、これによって、数第1の配線毎の走査信号が印加 極性の間圧信号をキャパシタに充電させ、しかる後に、 ノイからの同時発光を実行させる露光手段、並びにも、 記算1配券群に第2回目の走査信号を傾入印加し、 によって、数第1の配券毎の走査信号が印加された

[0012] 本発明の好ましい好々の超接倒では、前記 **策スイッチング架子アレイの第1の頃番及び第2の順費**

スイッチング架子は、薄膜トランジスタであり、ま

は、それぞれ奇数番及び偶数番である。

特別平11-198433

数キャパンクを一斉に放電させるように前配回時発光回 首を動作させる駆動手段を有する発光装置に、 第6の特 [植正対象項目名] 0012 [補正対象哲觀名] 明細哲 [相正方法] 変更 [手続補正3] [植正内容] 数を有する。

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